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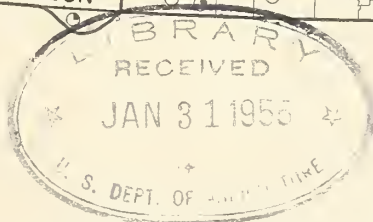
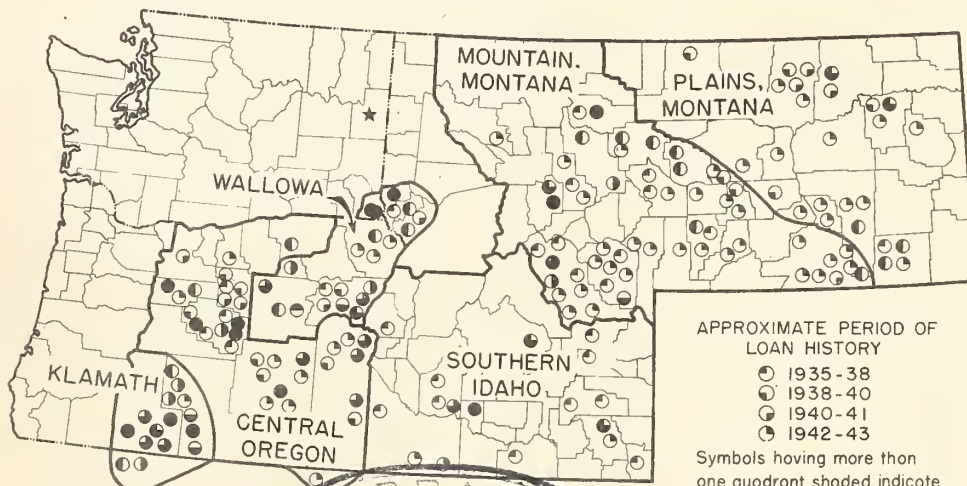
3 CATTLE RANCHES,

0 SPOKANE FARM CREDIT DISTRICT;

3a

RECORD OF PRODUCTION, INCOME, EXPENSE,
AND FINANCIAL PROGRESS,
1935 - 1943 //

HEADQUARTERS OF RANCHES INCLUDED IN ANALYSIS



XL ECONOMIC AND CREDIT RESEARCH DIVISION

2 U.S. FARM CREDIT ADMINISTRATION //
UNITED STATES DEPARTMENT OF AGRICULTURE

5c
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SUMMARY

Cattle production, ranch income, and ranch operating expense in the Spokane Farm Credit District were analyzed on 177 ranches having loan history records of 1 or more years during the 1935-43 period. Counting a year's record of each ranch represented as 1 ranch year, this study is based on 685 ranch-year records.

Net financial progress, defined as excess of income over operating expense, averaged \$1.91 annually per head inspected during 1935-39 compared with \$6.25 annually during 1940-43. By production areas, yearly net financial progress in 1935-39 varied from an average of \$1.10 per head inspected in the Wallowa area to an average of \$3.15 per head in the Central Oregon area. Average annual progress, 1940-43, ranged from \$3.52 per head in the Klamath area, Oregon, to \$8.70 per head in the Plains area of Montana.

Years most favorable for cattle ranch net income during 1935-43 were 1941 and 1942 while the least favorable year was 1936. Average net financial progress in six production areas was \$6.53 per head inspected in 1941 and \$7.02 in 1942, whereas the 1936 average in the six areas was just at the break-even point between net progress and net loss. In 1936 only 41 percent of the ranches studied made progress compared with 92 percent in 1941 and 86 percent in 1942.

Prices received by farmers and ranchers for beef cattle during the 9 years of this study averaged 121 percent of the 15-year 1923-37 average in Oregon, 128 percent in Idaho, and 131 percent in Montana. In the first 5 years (1935-39) of the period studied, the farm price of beef cattle was about equal to the 15-year average, but in the recent 4 years, 1940-43, beef cattle prices averaged 149 percent of the 1923-37 average in Oregon, 160 percent in Idaho, and 165 percent in Montana.

This analysis was made by the Economic and Credit Research Division in cooperation with the Production Credit Corporation, the Federal Intermediate Credit Bank, and the Director of Research, Farm Credit Administration of Spokane. Data for the analysis were obtained from the records of the Federal Intermediate Credit Bank and production credit associations.

Ralph U. Battles, Acting Chief
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Condition of ranges, 1935-39, averaged 3 points below the 1923-37 average in Oregon, 10 points below the long-term average in Montana, and 1 point above the 15-year average in Idaho. During 1940-43, the average condition of ranges was equal to the 1923-37 average in Oregon, and 2 points higher than the long-term average in both Idaho and Montana.

Calf crop, or number of calves raised annually as a percent of cows and heifers 2's, averaged 70 percent for the six areas studied, 1935-39, but was substantially higher in every area during 1940-43, averaging 78 percent for the six areas. In Montana, an improvement of 9 percentage points in calf crop in the Mountain area, 1940-43 compared with 1935-39, and an improvement of 11 percentage points in the Plains area was paralleled by an improvement of 12 points in average condition of ranges, 1940-43 over 1935-39. By areas, the calf crop was lowest in the Klamath area, averaging 58 percent, 1935-39, and 68 percent, 1940-43, and was highest in the Plains area of Montana, averaging 75 percent, 1935-39, and 86 percent, 1940-43.

Apparent loss of cattle as a percent of number inspected has not varied greatly during the 9 years, 1935-43, except in the Southern Idaho area where the average, 1935-39, was 5 percent compared with 2 percent, 1940-43. By areas, the 9-year average was 3 percent in the Klamath and Wallowa areas and the Mountain area of Montana, and 4 percent in the Central Oregon, Southern Idaho, and Plains, Montana, areas.

Net cattle production or net turn-off in percent of number inspected, displayed a generally upward trend from low points in 1935, 1936, or 1937, reached a high point in 1940 or 1941 in most areas, and declined moderately in the following years. From 1937 to 1943, changes in net cattle production were associated closely with changes in the proportion of herd numbers consisting of breeding cows versus growing cattle. Proportion of breeding cows increased generally from 1937 reaching a high point in most areas in 1940, 1941, or 1942 and decreased moderately in the subsequent year or years.

Yearly average net sales proceeds or gross income from sale of cattle adjusted for ranch inventory change and cost of cattle purchased increased every year from 1938 through 1942 in all areas, with only a minor exception. From a relatively low six-area average of \$14.88 per head inspected, net sales proceeds rose to a relatively high six-area average of \$24.78 in 1942. During 1935-39 net sales proceeds averaged \$14.40 whereas the 1940-43 average was \$23.22 representing an increase of 61 percent. Higher gross income in the recent period was attributed in part to more favorable weather and range conditions resulting in larger net number of cattle turned off and larger gains in weight per head, and in part to more favorable market prices for beef cattle in recent years.

Prices received per head of cattle sold, 1935-39, averaged \$50.67; for 1940-43 the average was \$71.15 or 40 percent higher. Comparison by areas, 1940-43, shows highest per-head sales prices in the Klamath, Wallowa, and Mountain, Montana, areas, averaging \$78.13 per head sold, contrasted with \$64.17 average for Central Oregon, Southern Idaho, and Plains, Montana.

Operating expense absorbed an average of approximately 80 percent of total income in the six areas during 9 years, 1935-43. In the 5-year, 1935-39, period, operating expense averaged 87 percent of gross income, but in the more recent 1940-43 period only 74 percent of gross income was required to pay operating expense. During 1935-43, the combined three-area average operating expense was \$13.36 per head inspected in the Central Oregon, Southern Idaho, and Plains, Montana, areas; the combined average of the other areas, Klamath, Wallowa, and Mountain, Montana, was \$16.37 in these 9 years. The general trend of operating expense has been upward in all areas since 1938. Expense for 1943 was 175 percent of the 1935-39 average in the Klamath, Wallowa, and Mountain, Montana, areas combined, and 165 percent of the 1935-39 average in the Central Oregon, Southern Idaho, and Plains, Montana, areas combined. All items of operating expense except feed purchased and interest paid increased continuously through the 9-year period with only occasional exceptions. Feed expense was highest in 1935-37 due to less favorable weather and range condition. Feed expense declined during 1938-40, remained relatively low through 1940-42, but increased considerably in 1943 due to rising feed prices.

Interest paid on all indebtedness, 1935-43, constituted 11 percent of average total operating expense and absorbed 9 percent of average gross income of ranches in the Klamath, Wallowa, and Mountain, Montana, areas. The combined average of the other three areas showed interest paid making up 14 percent of total operating expense and absorbing 11 percent of gross income. In dollars per head inspected, interest paid fluctuated less than any other item of expense during the 9 years studied. In the combined average of the Central Oregon, Southern Idaho, and Plains, Montana, areas, interest paid averaged \$1.81 per head inspected, 1935-39, when net income averaged only \$2.46 per head, whereas in 1940-43, interest paid averaged \$1.86 per head, when net income averaged 146 percent higher.

Total liabilities of all ranches studied, fall 1943, averaged \$29.66 per head of cattle inspected, compared with an average of \$38.98 for all ranches in the study, fall 1938. In fall 1938, by areas, total debt averaged highest in the Plains area of Montana with total liabilities of \$44.10 per head inspected, and was lowest on the Southern Idaho ranches, averaging \$28.26 per head inspected. In fall 1943, ranches in the Wallowa area had highest total liabilities, averaging \$41.41, per head, and the lowest area average was that of the Mountain area of Montana, with \$21.69 per head. On groups of identical ranches with three to four successive annual financial statements available, through various portions of the 9-year period, the average of total liabilities remained about level, fall 1934 to fall 1937, and showed a generally downward trend, fall 1937 to fall 1943.

Livestock loan in the six areas averaged \$17.05 per head inspected fall 1938, and \$14.29, fall 1943. In general, on groups of identical ranches having three or more successive annual financial statements available in the study, livestock loan tended to increase slightly from fall 1934 to fall 1936, remained about steady from fall 1936 to somewhere in the period of fall 1939 to fall 1941, and again decreased moderately from this point to the fall of 1943.

Debt reduction was a major use of net income by the ranches studied in the 4 years of relatively high income, 1940-43. In 1942, 44 percent of the ranches studied used half or more of net income for reduction of debt; in 1943, 46 percent of the ranches studied devoted half or more of net income to that purpose. Apparent allocation of net income to reduce debts versus increasing livestock inventories or purchase of real estate and other assets varied greatly between ranches and between areas in every year. Typical in only a very general way was the use of net income by 19 ranches in Central Oregon in 2 years, 1942-43, allocating \$6.91 average annual net income per head inspected as follows: \$3.19 for debt reduction, \$1.09 for increasing livestock inventory, and \$2.63 for investment in real estate or other assets.

Investment in real estate and other assets has absorbed a large proportion of net income on the ranches studied in the recent 3 years, 1941-43. By areas, the average annual investment in such assets, 1941-43, has been equivalent to the following percentages of average net financial progress: Wallowa, 86 percent; Plains, Montana, 79; Klamath, 65; Southern Idaho, 63; Mountain, Montana, 37; and Central Oregon, 35.

PRODUCTION, INCOME, EXPENSE, AND FINANCIAL PROGRESS OF CATTLE
RANCHES IN SPOKANE FARM CREDIT DISTRICT
1935-43

During 9 years, 1935-43, average financial progress of cattle ranches in the Spokane Farm Credit District varied from a low of \$0.00 per head inspected in 1936 to a high of \$7.02 per head in 1942. In 1936, income exceeded operating expense on only 41 percent of the ranches analyzed while in 1942 financial progress was made by 86 percent of the ranches. In 1941, a still higher percentage of the ranches studied made progress, but average progress per head averaged \$6.53, which was 7 percent below the peak average reached in 1942.

Because of regional differences affecting cattle production, ranch income, and operating expense, the ranches studied were grouped into six areas as outlined on the cover-page map:

1. Klamath area in southern Oregon, overlapping into northern California
2. Central Oregon area
3. Wallowa area, including the Blue Mountain region of Oregon, and Asotin County, Washington, and Nez Perce and Lewis Counties with a portion of Idaho County, Idaho
4. Southern Idaho area
5. Mountain area, western and south central Montana
6. Plains area, north central and eastern Montana

A comparison of areas in average yearly net financial progress in table 1 makes it apparent not only that there were differences between areas in average net income over a period of years, but also that year-to-year fluctuations were frequently quite different in the areas. Some severely unfavorable years in certain areas were moderately favorable in other areas. In 1936, for example, the Plains, Montana, area experienced its most unfavorable year of the entire period, while the Klamath area ranches realized net financial progress about equal to the area's long-term average. In 1940, the Plains, Montana, ranches realized net financial gain of \$9.48 per head while the Klamath ranches averaged only 94 cents per head in net gain.

Net financial progress averages in table 1, as well as other ranch data in this study, are based on an analysis of the financial and cattle production records of 177 ranches having loan history data covering a period of 1 or more years during 1935-43. Table 2 shows the number of ranches represented each year by areas. The total of six areas indicates, for example, that the records of 100 ranches were available for study in 1938, while only 63 were analyzed in 1941. Counting a year's record of each ranch represented as 1 ranch year, a total of 685 ranch-year records were analyzed during the 1935-43 period.¹

¹ Length of period covered and continuity of the record of individual ranches in the study are summarized in table 46, page 46.

Table 1 - Net financial progress of cattle ranches, by areas; yearly average per head inspected, 1935-43 ^a

Year or period	Klamath area, Oregon	Central Oregon area	Wallowa area	Southern Idaho area	Mountain area, Montana	Plains area, Montana	Average 6 areas ^b
<i>dollars per head inspected</i>							
1935	.33	4.12	1.59	.92	2.71	- .07	1.60
1936	2.64	1.95	-1.45	-.13	-1.09	-1.93	.00
1937	2.54	3.37	3.43	1.06	2.92	1.98	2.55
1938	.40	3.22	.06	2.43	2.69	3.53	2.09
1939	2.30	3.07	1.86	3.67	4.80	4.07	3.30
1940	.94	2.14	7.42	2.35	7.05	9.48	4.90
1941	3.52	5.16	6.31	6.74	9.10	8.33	6.53
1942	3.29	8.03	6.22	6.89	7.39	10.32	7.02
1943	6.34	5.16	5.53	8.15	7.50	6.66	6.56
1935-39	1.64	3.15	1.10	1.59	2.45	1.52	1.91
1940-43	3.52	5.12	6.37	6.03	7.76	8.70	6.25

^a Net financial progress defined as excess of income over operating expense on a cash outlay basis, income consisting principally of sales proceeds from cattle adjusted for inventory change and cost of cattle purchased.

^b Straight average of area averages, giving the six areas equal weight.

Table 2 - Number of ranches included in this study by areas, and percent of ranches making financial progress, by years, 1935-43

A - Number of ranches studied

Year	Klamath area, Oregon	Central Oregon area	Wallowa area	Southern Idaho area	Mountain area, Montana	Plains area, Montana	Total 6 areas
1935	6	12	10	11	21	6	66
1936	6	12	10	11	21	6	66
1937	6	12	10	11	21	6	66
1938	13	26	14	13	24	10	100
1939	13	22	12	5	14	10	76
1940	13	22	16	5	13	8	77
1941	11	20	10	4	11	7	63
1942	11	22	11	3	25	13	85
1943	7	22	9	5	31	12	86

B - Percent of total number of ranches making financial progress

Year	Klamath area, Oregon	Central Oregon area	Wallowa area	Southern Idaho area	Mountain area, Montana	Plains area, Montana	Total 6 areas
1935	50	92	60	73	81	67	74
1936	67	42	40	55	24	50	41
1937	50	75	70	45	57	50	59
1938	54	77	50	77	71	70	68
1939	69	73	50	100	86	90	75
1940	62	77	61	60	92	100	79
1941	73	90	100	100	100	100	92
1942	82	86	73	100	92	85	86
1943	86	73	67	100	77	92	79

Year-to-year variations in net financial progress, fluctuating differently in the six areas, and shown in table 1 in the form of averages in dollars per head, are illustrated from a different viewpoint in the lower section of table 2. In most years in every area there were some ranches making no net financial gain or even suffering a net loss on the year's operations. In 1936 in the Mountain, Montana, area, for example, only 24 percent of the ranches analyzed made progress, indicating that 76 percent of the ranches studied failed in that year to make progress or suffered net financial loss. In 1941, 100 percent of the ranches represented in that area made progress.

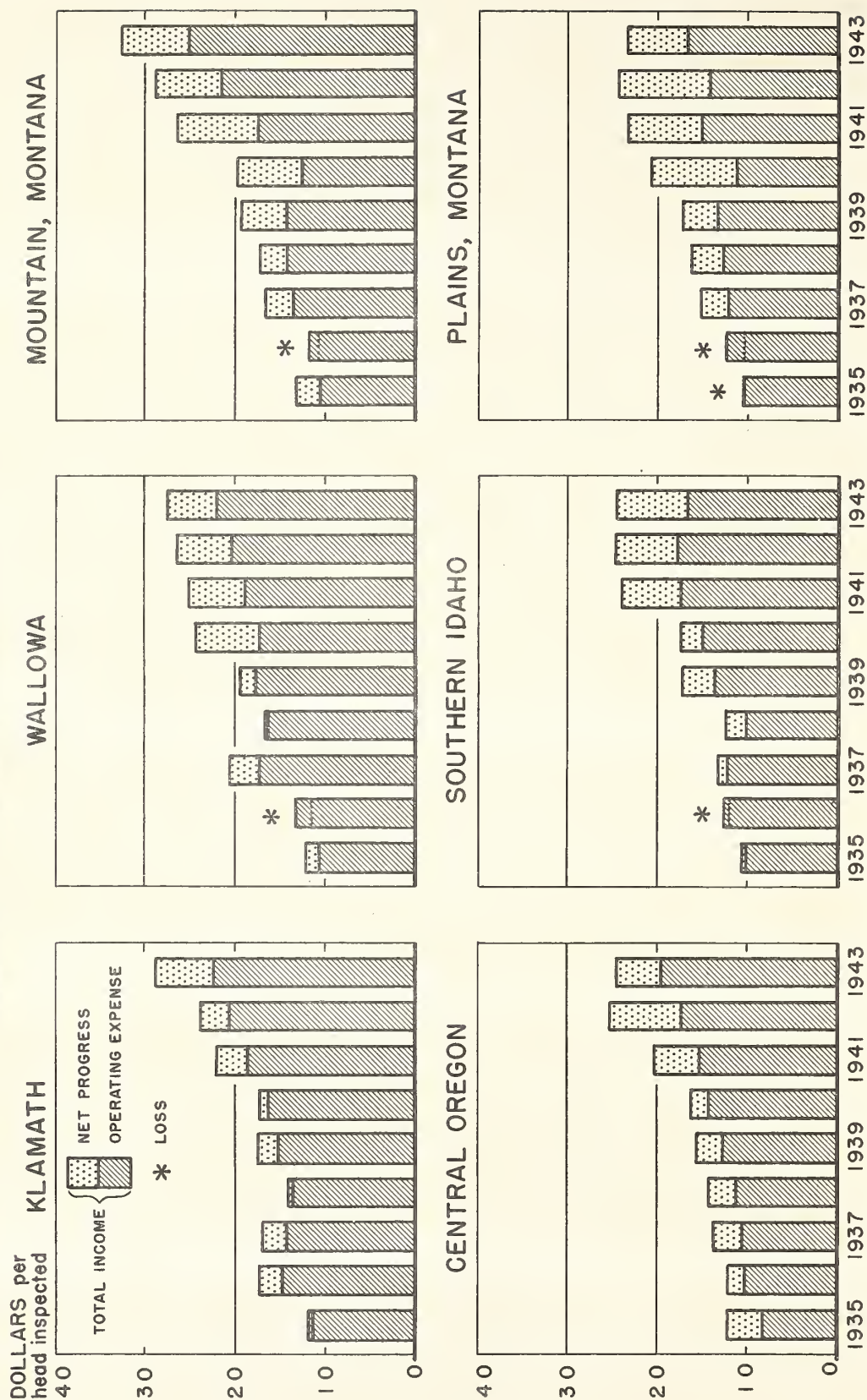
Considering the six-area averages in table 1 and the six-area percentages in table 2-B, it may be concluded that the years most favorable to cattle ranch net progress during the period studied were 1941 and 1942, and the least favorable year was 1936. Average net financial progress in the six production areas was \$6.53 per head inspected in 1941 and \$7.02 in 1942, whereas the 1936 average was just at the break-even point between net progress and net loss. In 1936, financial progress was shown by only 41 percent of the ranches studied compared with 92 percent in 1941 and 86 percent in 1942. While it is true that 1943 was also a favorable year and the average progress in dollars per head, according to table 1, was slightly higher than the average progress of those studied in 1941, it must also be considered that progress in 1943 apparently was less uniform among individual ranches since only 79 percent of all ranches studied made progress, while the percentage making progress in 1941 and 1942, respectively, was 13 points and 7 points greater.

Probable reasons for year-to-year variations in progress realized are developed in subsequent sections of this study in which the principal factors contributing to net financial progress are analyzed separately. Respecting the smaller number of ranches making net financial progress in 1943 than in 1941 it may be stated briefly that operating expense averaged 20 percent higher in 1943 than in 1941, calf crop percentage averaged slightly lower, and, in all but the two Montana areas, condition of ranges averaged considerably lower in 1943 than in 1941 which was a year of optimum range conditions.

Since net financial progress in this analysis represents the difference between total ranch income and total operating expense, fluctuations in net progress may result from variations in either income or expense. Chart A on the following page illustrates how average income and average expense, varying greatly during 1935-43, resulted in even greater relative variations in net income. In the Wallowa area, for example, substantial net income was realized in 1941 because of high total income, although operating expense in that year was higher than in any year from 1935 through 1940.

Ranch income and net financial progress of cattle ranches are influenced by a variety of factors. Two factors not subject to the control of ranchmen but having an important effect on their year-to-year net income are: condition of ranges depending largely on weather, and prices received for cattle depending on economic conditions, particularly on employment

CHART A
INCOME, EXPENSE, AND NET FINANCIAL PROGRESS
ANNUAL AREA AVERAGES, 1935-43



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and wages in nonagricultural enterprises. As a background for more detailed analysis of ranch income, table 3 summarizes annual data on beef cattle prices and condition of ranges during the 9 years under study, and permits comparison between the years covered by this study and the 15-year, 1923-37, average. Prices received by farmers and ranchers for beef cattle during 1935-39 were approximately equal to the 15-year average for the States of Oregon, Idaho, and Montana. Prices received during 1940-43 in Oregon averaged 49 percent above the 15-year average, 60 percent above in Idaho, and 65 percent above in Montana. Condition of ranges during 1935-39 averaged 3 percentage points below the long-term average in Oregon and 10 percentage points below in Montana, although Idaho ranges during this time were slightly better than the long-term average. During 1940-43, Oregon ranges were equal to the 15-year average, while Idaho and Montana ranges averaged two points higher than their long-term average condition. Summarizing broadly, these two important factors beyond the control of ranch operators, during 1935-39 were slightly above the long-term average in Idaho, slightly less favorable than average in Oregon, and considerably less favorable than average in Montana; during 1940-43, the combined effect of these two factors was appreciably above average in all areas included in this study.

Table 3 - Prices received for beef cattle and condition of ranges, Oregon, Idaho, and Montana, average 1923-37 and annually 1935-43

Year or Period	Farm price of beef cattle, BAE data			Index numbers, farm price of beef cattle 1923-37 = 100			Condition of ranges, annual average of first of month reports ^a		
	Oregon	Idaho	Montana	Oregon	Idaho	Montana	Oregon	Idaho	Montana
Averages:	<i>dollars per 100 pounds</i>			<i>index numbers</i>			<i>percent</i>		
1923-37.....	6.19	5.45	5.79	100	100	100	84	84	86
1935-39.....	6.12	5.55	6.00	99	102	104	81	85	76
1940-43.....	9.25	8.72	9.58	149	160	165	84	86	88
Annual:									
1935.....	5.70	4.95	5.70	92	91	98	80	80	72
1936.....	5.50	5.10	4.80	89	94	83	82	87	65
1937.....	6.80	6.00	6.50	110	110	112	80	82	68
1938.....	6.00	5.50	6.20	97	101	107	89	94	86
1939.....	6.60	6.20	6.80	107	114	117	75	81	88
1940.....	7.10	6.50	7.30	115	119	126	86	85	86
1941.....	8.40	8.10	8.80	136	149	152	91	92	99
1942.....	10.30	9.40	10.80	166	172	187	81	85	90
1943.....	11.20	10.90	11.40	181	200	197	80	84	88

^a As reported in "Western Livestock and Range Report," Bureau of Agricultural Economics, according to the following percentage scale:

49 or below.....	very bad	80-89.....	good
50-59.....	bad	90-99.....	very good
60-69.....	poor	100 and over.....	excellent, unusual
70-79.....	fair		

Calf Crop

A widely used index of ranch production is the number of calves raised as a percent of the number of cows and heifers 2's at the preceding fall inspection. According to table 4 the two Montana areas averaged the highest percentage calf crops, 1935-43, with the Klamath area showing the lowest average of the six areas. All areas obtained substantially larger percentage calf crops during 1940-43 than in the 1935-39 period, the over-all average for the six areas being 78 percent, 1940-43, compared with 70 percent, 1935-39. Again, considering the six areas as a whole, the maximum percentage calf crop for the 9 years was reached in 1940 while 1935 and 1937 were the least favorable years in this respect.

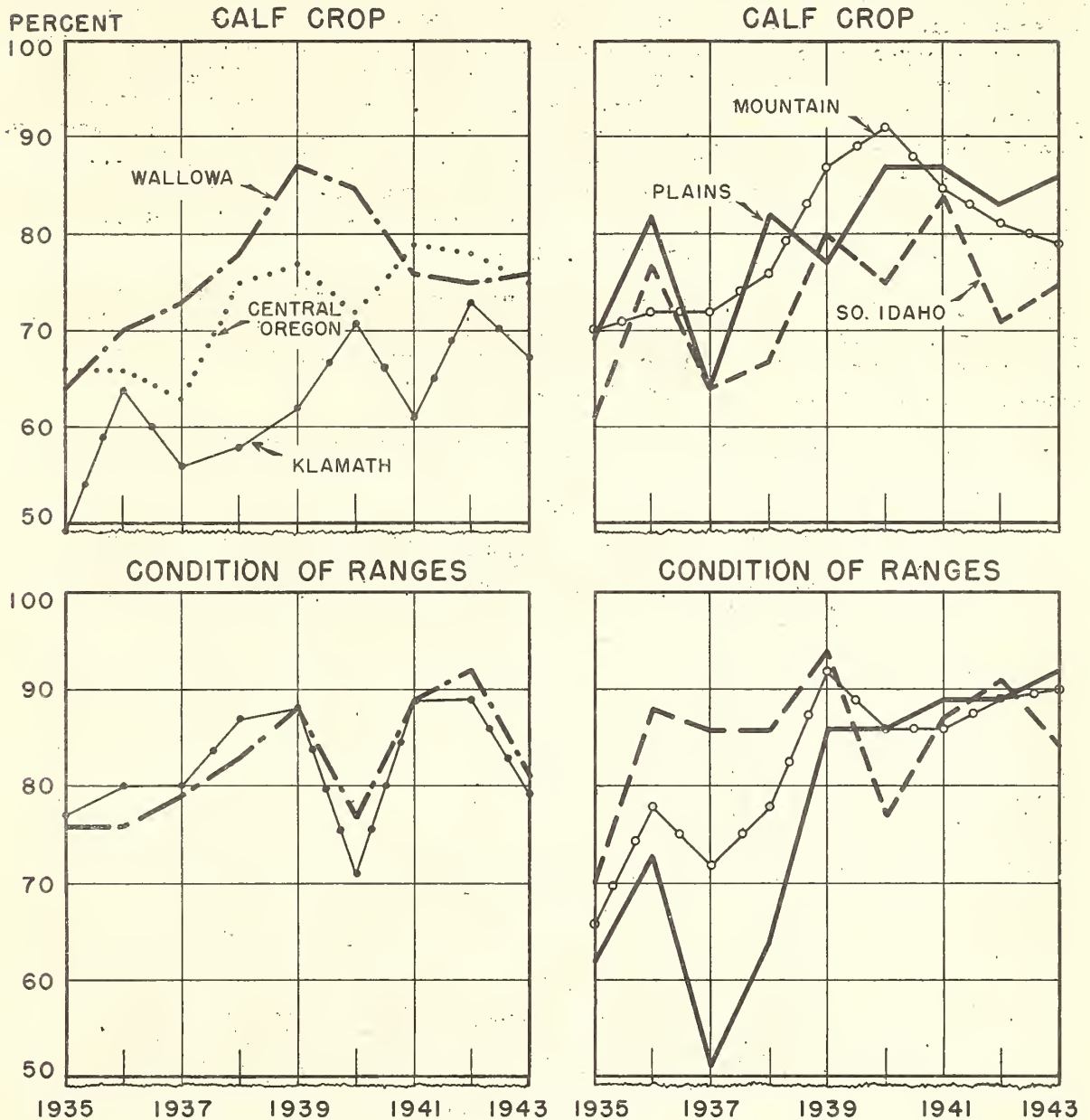
Table 4 - Calf crop: area averages by years, 1935-43, calves raised as a percent of cows and heifers 2's at preceding fall inspection^a

Year or period	Klamath area, Oregon	Central Oregon area	Wallows area	Southern Idaho area	Mountain area, Montana	Plains area, Montana	Average 6 areas
	<i>percent</i>						
1935	49	66	64	61	70	69	63
1936	64	66	70	77	72	82	72
1937	56	63	73	64	72	64	65
1938	58	75	78	67	76	82	73
1939	62	77	87	80	87	77	78
1940	71	72	85	75	91	87	80
1941	61	79	76	84	85	87	79
1942	73	78	75	71	81	83	77
1943	67	75	76	75	79	86	76
1935-39	58	69	74	70	75	75	70
1940-43	68	76	78	76	84	86	78

^aEach annual area average is a weighted average of the experience of the individual ranches according to number of breeding cows in the herd. The average of six areas and the 1935-39 and 1940-43 period averages are straight averages of the given area and annual averages.

Year-to-year percentage calf crop is influenced by the condition of the breeding herd, which depends to an important extent on condition of ranges during late spring and summer. There are, however, other important factors which affect percentage calf crop, such as hay supplies for supplemental winter feeding, range management, and herd management during the breeding and calving seasons. Hence, only a very general correspondence between percentage calf crop and average condition of ranges can be observed (chart B).

CHART B CALF CROP AND CONDITION OF RANGES ANNUAL AREA AVERAGES, 1935-43*



014920-B

¹Calves raised as a percent of cows and heifers 2's at preceding fall inspection; average condition of ranges by crop reporting districts most nearly corresponding to the respective areas, for a 12-month period including the first of month reports dated April 1 of preceding year to March 1 of the year indicated. See note 1, table 3, for percentage scale used in the monthly range condition reports. Data on condition of ranges for the Klamath area separate from the Central Oregon area were not available.

In this connection, reference is made to the striking discrepancy between the severe dip in range conditions in all Oregon areas for the calf-crop year 1940, and the relatively high 1940 calf crop. Numerical data on Oregon range conditions for April 1, 1939, through March 1, 1940, must be supplemented with narrative information which accompanied them for a full understanding of conditions affecting calf crop. In April 1939, there was a large carry-over of hay and other feed supplies from two previous above-average growing years. Despite very poor ranges due to spring and summer drought, ranch feed supplies, November 1, 1939, were reported as still "generally ample for a normal winter" due to carry-over from 1938. Reports, December 1, 1939, stated, "With some supplemental feeding, cattle are in fairly good condition despite the poor ranges." December and January weather was mild and open. "Large supplies of hay and other feeds" still remained unused by February 1, 1940.

Table 5, based on a distribution of 100 ranches according to percentage calf crop in 1938 and of 86 ranches in 1943, indicates the wide variation in percentage calf crop between individual ranches which may normally be expected in range cattle areas in a single year.

Table 5 - Calf crop: Number of ranches, by areas, averaging stated percentage calf crop, 1938 and 1943

1938						
Percent ^a	Klamath area, Oregon 13 ranches	Central Oregon area 26 ranches	Wallowa area 14 ranches	Southern Idaho area 13 ranches	Mountain area, Montana 24 ranches	Plains area, Montana 10 ranches
	number of ranches					
90 and over	-	8	4	2	3	3
85-89	-	1	2	-	7	1
80-84	1	2	1	2	2	3
75-79	1	5	2	-	4	1
70-74	1	3	2	4	-	1
65-69	1	1	-	-	4	-
60-64	2	2	1	1	2	1
55-59	3	1	1	-	2	-
Under 55	4	3	1	4	-	-
	percent					
Area average	58	75	78	67	76	82
Median	59	77	81	71	80	80
1943						
Percent ^a	Klamath area, Oregon 7 ranches	Central Oregon area 22 ranches	Wallowa area 9 ranches	Southern Idaho area 5 ranches	Mountain area, Montana 31 ranches	Plains area, Montana 12 ranches
	number of ranches					
90 and over	1	4	2	1	8	5
85-89	2	-	1	-	6	4
80-84	-	4	2	-	7	-
75-79	-	6	1	3	7	2
70-74	1	3	1	-	1	-
65-69	-	1	1	-	2	1
60-64	3	2	-	-	-	-
Under 60	-	2	1	1	-	-
	percent					
Area average	67	75	76	75	79	86
Median	73	78	80	78	84	88

^aNumber of calves raised (fall count) as a percent of number of cows and heifers 2's at preceding fall inspection.

Percentage calf crop obviously affects ranch income directly since it affects the number of cattle and total pounds of beef cattle annually salable from the ranch. Table 6 shows average income and expense of ranches in four areas, grouped according to average percent calf crop during 3 years, 1938-40. Total ranch income, except in the Wallowa area, was highest on the groups of ranches having highest calf crops. Operating expense, however, did not average highest on the groups having highest calf crops, except only the Central Oregon area. This may indicate that higher percentage calf crops are due in part to factors in management which do not necessarily involve higher expense outlay. Advantageous location and generally favorable ranch layout may also have contributed to the high income and high calf crop maintained by some ranches, accompanied by relatively moderate or low cash operating costs. Data in table 6 permit few general conclusions; they suggest that ranch income and expense and consequent net financial progress depend on the interplay of a number of factors and the effect of individual factors, such as percentage calf crop, cannot readily be segregated and analyzed.

Cattle Losses

Only very moderate differences existed between areas in average apparent cattle losses, 1935-43. Losses averaged highest in the Plains, Montana, and Central Oregon areas at near 4 percent, and lowest in the Klamath, Wallowa, and Mountain, Montana, areas at 3 percent. Some fluctuation in percentage losses by years occurred in each area, but the six-area average was less than 1 percent higher for 1935-39 than for 1940-43 (table 7).

Table 6 - Calf crop, ranch income, expense, net progress, size of ranch and percent of herd in breeding cows: Average per year during 3-year 1938-40 period on ranches grouped according to percentage calf crop

Area and group according to percentage calf crop	Calf crop pct.	Total income \$ per head Inspected	Operating expense \$ per head Inspected	Net financial progress \$ per head Inspected	Average number cattle per ranch	Cows & heifers 2's, pct. of herd
<u>Klamath area, Oregon:</u>						
5 rchs., highest pct. calf crop	75	16.72	13.05	3.67	529	52
4 rchs., intermediate pct. calf crop	58	15.40	15.01	.39	930	52
4 rchs., lowest pct. calf crop	55	14.69	15.25	-.56	564	50
<u>Central Oregon area:</u>						
7 rchs., highest pct. calf crop	86	18.17	15.86	2.31	221	50
8 rchs., intermediate pct. calf crop	77	15.26	11.84	3.42	549	48
7 rchs., lowest pct. calf crop	65	14.50	13.16	1.34	545	45
<u>Wallowa area:</u>						
4 rchs., highest pct. calf crop	92	17.96	14.73	3.23	392	33
4 rchs., intermediate pct. calf crop	85	18.97	17.96	1.01	568	43
4 rchs., lowest pct. calf crop	72	20.68	18.68	2.00	409	44
<u>Mountain area, Montana:</u>						
6 rchs., highest pct. calf crop	91	20.88	14.65	6.23	370	49
4 rchs., intermediate pct. calf crop	84	18.78	13.77	5.01	1,087	45
3 rchs., lowest pct. calf crop	79	17.67	14.85	2.82	378	47

Table 7 - Apparent loss of cattle: Number lost as a percent of total number inspected, area averages by years, 1935-43

Year or period	Klamath area, Oregon	Central Oregon area	Wallowa area	Southern Idaho area	Mountain area, Montana	Plains area, Montana
	percent					
1935	3	3	3	5	4	7
1936	3	4	5	7	4	5
1937	2	3	2	5	4	5
1938	3	4	3	5	3	3
1939	2	4	2	3	2	4
1940	2	3	2	3	2	2
1941	3	3	3	3	3	4
1942	3	5	3	2	4	4
1943	4	5	3	2	3	5
1935-39	3	4	3	5	3	5
1940-43	3	4	3	2	3	4

Net Cattle Production

Another index of ranch production, not so commonly used as calf crop percent, is net cattle production defined as the difference between the number of calves raised in a year (fall count of calves) and the apparent loss of mature cattle during the year, this difference expressed as a percent of total number of cattle at inspection. Net cattle production is frequently stated as number of cattle produced in a production year, less loss of cattle, per hundred cattle inspected, and is sometimes referred to as net turn-off. In a given area, other factors assumed equal, net cattle production will average higher in those years or periods of years when ranchmen generally are carrying a higher than average ratio of breeding cows to total herd numbers.

Net cattle production in all areas studied displayed a generally upward trend from 1935, 1936, or 1937, to a high in 1940 or a nearby year and, in most areas, declined moderately from that peak to the end of the period studied (table 8, section A). In the six-area average, net cattle production was highest in 1940 and 1941 at 36 percent, and thereafter declined two points per year. Ranches in the Mountain area of Montana reached their highest average in 1939, those in the Plains, Montana, and Klamath areas in 1940, and those in Central Oregon in 1941, while the Wallowa area maintained its maximum percentage for 2 years, 1941-42.

While variations in weather, range condition, percentage calf crop, and percentage of cattle losses all have played a part, the principal factor bringing about the variations in net cattle production in recent years have been adjustments in the ratio of cow numbers to total numbers of cattle carried on the ranches. The six-area averages in table 8-B indicate a trend from 1937 to 1941 toward increasing ratios of cows in the total number of cattle on ranches. In other words, the ranches apparently were, on the average, going more and more completely on a cow-calf basis during that period. Since 1941, this trend has reversed and the proportion of cows in the herd had declined moderately up to fall 1942 or the beginning of the 1943 production year.

Table 8 - Net cattle production and ratio of number of breeding cows to total herd

Year	Klamath area, Oregon	Central Oregon area	Wallowa area	Southern Idaho area	Mountain area, Montana	Plains area, Montana	Average 6 areas
A. Percent net cattle production ^a							
1935	21	24	25	21	28	30	25
1936	26	26	22	27	28	37	28
1937	25	25	25	25	31	25	26
1938	26	30	30	25	31	40	30
1939	29	33	31	34	41	40	35
1940	34	33	31	33	36	47	36
1941	26	37	33	39	37	43	36
1942	29	34	33	37	37	35	34
1943	24	31	28	32	39	36	32
B. Ratio, number of breeding cows to total herd number (percent) ^b							
1935	48	42	43	44	45	54	46
1936	46	45	38	45	45	52	45
1937	48	45	36	46	48	46	45
1938	51	45	42	45	44	53	47
1939	50	48	38	46	50	56	48
1940	52	50	39	48	42	56	48
1941	47	51	47	50	48	54	50
1942	43	49	48	55	50	46	48
1943	41	49	41	46	53	48	46
Highest years							
Net Cattle Production	1940	1941	1941-42	1941	1939	1940	1940-41
Cow ratio	1940	1941	1942	1942	1943	1939-40	1941
Calf crop	1942	1941	1939	1941	1940	1940-41	1940

^aNumber of calves raised, less number of cattle lost, expressed as a percent of number of cattle at fall inspection.

^bNumber of cows and heifers 2's as a percent of total number of cattle inspected.

The earlier tendency to restrict herds largely to breeding cows and replacement heifers, and the more recent adjustment toward keeping proportionately fewer breeding cattle and more growing cattle, may both be ascribed to changes in market price relationships between different classes of cattle, changes in feed prices and feed supplies in range and feeding areas, and particularly the Nation-wide decline through 1943 in supplies of grains and concentrated feeds in relation to total feed-consuming animal units.

As might be expected, due to local variations in the timing of the impact of these factors, the change in trend occurred in different years in the different areas. According to table 8-B, the changes came during 1940 in the Klamath and Plains, Montana, areas, in 1941 on the Central Oregon ranches, and in 1942 in the Wallowa area and Southern Idaho, while no reversal was yet apparent in the Mountain, Montana, area up to the beginning of 1943.

Table 9 - Net sales proceeds per head inspected; area averages by years, 1935-43^a

Year or period	Klamath area, Oregon	Central Oregon area	Wallowa area	Southern Idaho area	Mountain area, Montana	Plains area, Montana	Average 6 areas
	<i>dollars per head inspected</i>						
1935	11.82	12.28	12.09	10.86	13.15	10.27	11.74
1936	17.36	12.13	11.76	12.50	10.72	10.18	12.44
1937	17.00	13.53	20.04	13.43	16.54	13.05	15.60
1938	14.00	14.26	16.11	12.39	16.83	15.69	14.88
1939	17.18	15.70	18.86	16.74	19.01	16.68	17.36
1940	17.04	16.22	24.05	17.24	19.75	20.62	19.15
1941	21.43	19.42	24.06	23.47	26.31	23.13	22.97
1942	22.19	24.31	25.85	24.81	28.15	23.34	24.78
1943	26.86	24.18	26.86	24.71	31.52	21.72	25.98
1935-39	15.47	13.56	15.77	13.18	15.25	13.17	14.40
1940-43	21.88	21.03	25.20	22.56	26.43	22.20	23.22

^aNet sales proceeds defined as total sales proceeds adjusted for cattle inventory change and cost of cattle purchased.

Cattle Sales Proceeds

Production factors discussed on preceding pages have a direct bearing on gross income of ranch operators. Income is also directly affected by the cattle sales program followed from year to year and prices received for cattle marketed. For the present analysis of ranch income, total proceeds from the sale of cattle were adjusted to a net figure for each ranch by taking into account year-to-year increases or decreases in the cattle inventory of the ranch, and deducting the cost of all cattle purchased except replacement bulls.¹ In making the adjustment for inventory change, the cattle on the ranch at each annual inspection were valued at a fixed price per head for each age group.² By valuing the inventory each year at the same per-head values, the influence on cattle inventory of fluctuations during the period in market values or in inspectors' values has been excluded from the net figure of financial progress. Net sales proceeds of the cattle ranches, computed in this manner, correspond roughly to gross income in other business enterprises. The use of this figure of net sales proceeds in dollars per head inspected, places the income of all ranches in all years on a comparable basis regardless of differences between ranches in the proportion of herd marketed and proportion carried over in any production and marketing year.

Net sales proceeds, 1940-43, averaged highest in the Mountain area of Montana at \$26.43 per head inspected, with the Wallowa area ranking a close second, averaging \$25.20 (table 9). The lowest 1940-43 average was made by the Central Oregon ranches with net sales proceeds of \$21.03. Taking the six areas as a whole, net sales proceeds displayed a steeply upward trend during the 9 years, 1935-43, with only a minor recession in 1938. The 1943 average of \$25.98 was 221 percent of the 1935 average.

¹Cost of bulls purchased was treated as an item of operating expense. See tables of itemized expense, pages 21 and 22.

²See page 52 for schedule of fixed values used.

Figures for each area show a similar upward trend although the rise was more irregular due to different fluctuations in range conditions and other local factors and possibly to the shifts from year to year in the identity and number of ranches on which the area averages were based. The 1938 recession in net sales proceeds occurred only in the Klamath, Wallowa, and Southern Idaho areas and may be attributed largely to a decline in the farm price of cattle of 12 percent in Oregon and 8 percent in Idaho (table 3). In Central Oregon, a marked rise in net cattle production in 1938 prevented a slump in net sales proceeds despite the price drop. In Montana, the 1938 price decline averaged only 5 percent and was accompanied by an extraordinary improvement in condition of ranges which rose from 68 percent in 1937 to 86 percent in 1938; thus, a decline in net sales proceeds was averted in the two Montana areas.

Table 10 - Number of ranches by areas, averaging stated amounts of net sales proceeds per head inspected, 1938

Dollars per head inspected	Klamath area, Oregon 13 ranches	Central Oregon area 26 ranches	Wallowa area 14 ranches	Southern Idaho area 13 ranches	Mountain area, Montana 24 ranches	Plains area, Montana 10 ranches
	<i>number of ranches</i>					
\$20 and over	-	-	1	-	3	1
16 - 19.99	2	7	5	2	11	4
12 - 15.99	7	13	5	7	8	4
8 - 11.99	3	6	1	3	2	1
Under \$8.00	1	-	2	1	-	-
	<i>dollars per head inspected</i>					
Average	14.00	14.26	16.11	12.39	16.63	15.69

Table 11 - Number of ranches, by areas, averaging stated amounts of net sales proceeds per head inspected, 1943

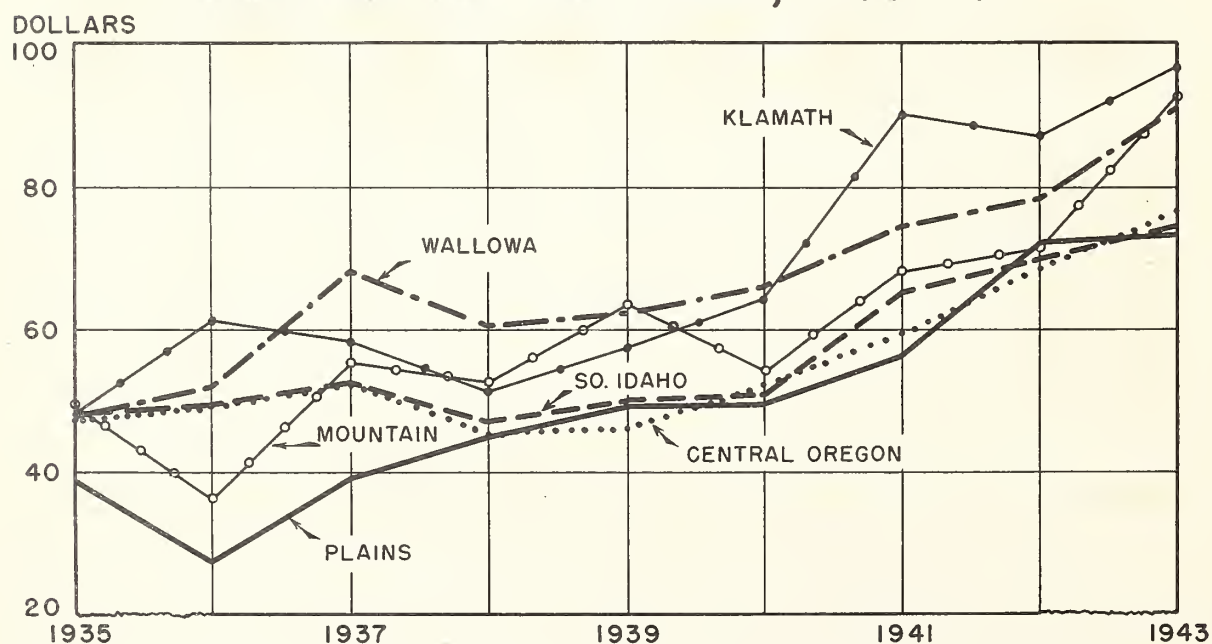
Dollars per head inspected	Klamath area, Oregon 7 ranches	Central Oregon area 22 ranches	Wallowa area 9 ranches	Southern Idaho area 5 ranches	Mountain area, Montana 31 ranches	Plains area, Montana 12 ranches
	<i>number of ranches</i>					
\$40 and over	-	1	-	-	2	-
36 - 39.99	-	-	1	-	4	-
32 - 35.99	-	1	-	-	4	-
28 - 31.99	1	3	3	-	6	1
24 - 27.99	3	4	2	3	5	2
20 - 23.99	3	8	-	2	3	6
16 - 19.99	-	5	1	-	5	2
Under 16.00	-	-	2	-	2	1
	<i>dollars per head inspected</i>					
Average	26.86	24.18	26.86	24.71	31.52	21.72

Net sales proceeds per head inspected are the composite result of a number of variable factors, including percentage calf crop and death losses; weights attained by cattle sold, depending on condition of ranges; supply of supplemental feeds and ranch management; and market prices per hundredweight of cattle sold. Wide year-to-year fluctuations in some of these factors frequently point in diverse directions, changes favorable to ranch income in some factors being accompanied by unfavorable changes in others.

Since all factors affecting net sales proceeds, with the exception of market price, may vary greatly between ranches, depending on location and management, and may fluctuate differently on different ranches from year to year, it is not surprising to find wide variations between ranches in net sales proceeds in any given year. Table 10 illustrates this variation in 1938 when average net sales proceeds were relatively low, while table 11 shows still wider differences between ranches in 1943 when average net sales proceeds were the highest of any year studied.

Prices received per head of cattle sold increased almost as rapidly during 1935-43 as ranch income represented by net sales proceeds per head inspected. According to table 12 the six-area average price per head was \$50.67 during 1935-39 and \$71.15, or 40 percent higher, during 1940-43. Different year-to-year fluctuations by areas, but all following the same upward trend during the period, are illustrated in chart C.

CHART C
PRICE RECEIVED PER HEAD OF CATTLE SOLD
ANNUAL AREA AVERAGES, 1935-43



014920-C

Table 12 - Price received per head of cattle sold; area averages by years, 1935-43

Year or period	Klamath area, Oregon	Central Oregon area	Wallowa area	Southern Idaho area	Mountain area, Montana	Plains area, Montana	Average 6 areas
<i>dollars per head sold</i>							
1935	48.89	47.71	47.83	48.77	49.68	38.95	46.97
1936	61.71	49.46	52.08	49.85	36.43	27.69	46.20
1937	58.32	52.49	68.34	52.84	55.80	39.46	54.54
1938	51.57	45.79	60.55	47.29	52.93	45.21	50.56
1939	57.94	46.76	62.47	50.19	63.83	49.19	55.06
1940	64.59	52.34	66.06	51.14	54.29	49.90	56.39
1941	90.44	59.61	74.84	65.04	68.13	56.36	69.07
1942	87.52	68.78	78.70	70.23	71.92	72.24	74.90
1943	96.84	76.66	91.28	74.51	92.90	73.26	84.24
1935-39	55.69	48.44	58.25	49.79	51.73	40.10	50.67
1940-43	84.85	64.35	77.72	65.23	71.81	62.94	71.15

Price per head of cattle sold is also a composite result of several factors which may fluctuate differently by years. Important among these factors are market price of beef cattle, class and age of cattle marketed, and market weights attained as the result of range and other feed conditions. The close relation between condition of ranges and farm price of beef cattle on the one hand, and average sales prices per head sold and gross ranch income from cattle (net sales proceeds per head) on the other hand, is illustrated on the basis of yearly area averages for the Central Oregon area in table 13, the Wallowa area in table 14, and the Mountain, Montana, area in table 15. A rough but convenient comparison of changes in production and price versus changes in sales proceeds and gross income may be made by using the index numbers (1935-39 base) in these tables.

Table 13 - Cattle sales proceeds, Central Oregon area, farm price of beef cattle and condition of range, annual averages, 1935-43

Year or period	Price received per head sold	Net sales proceeds per head inspected	Farm price, beef cattle \$ per cwt. Oregon	Condition of range (percent)	Index numbers, 1935-39 = 100			
					Price received per head sold	Net sales proceeds per head inspected	Farm price beef cattle	Condition of range
1935	47.71	12.28	5.70	79	98	90	93	98
1936	49.46	12.13	5.50	82	102	89	90	101
1937	52.49	13.53	6.80	79	108	100	111	98
1938	45.79	14.26	6.00	90	95	105	98	111
1939	46.76	15.70	6.60	76	97	116	108	94
1940	52.34	16.22	7.10	82	108	119	116	101
1941	59.61	19.42	8.40	91	123	143	137	112
1942	68.78	24.31	10.30	83	142	179	168	102
1943	76.66	24.18	11.20	79	158	178	183	98
1935-39	48.44	13.58	6.12	81	100	100	100	100
1940-43	64.35	21.03	9.25	84	133	155	151	104

^aPrice received by farmers for beef cattle, Oregon, as computed by BAE.

^bCondition of range, average of first of the month reports, November 1 of preceding year to October 1 of indicated year, inclusive, for crop reporting district corresponding most nearly to this production area. See table 3 for source of range condition data and definition of the percentage scale.

Table 14 - Cattle sales proceeds, Wallowa area, farm price of beef cattle, and condition of range, annual averages, 1935-43

Year or period	Price received per head sold	Net sales proceeds per head inspected	Farm price, beef cattle, \$ per cwt., Oregon and Idaho	Condition of range ^b (percent)	Index numbers, 1935-39 = 100			
					Price received per head sold	Net sales proceeds per head inspected	Farm price beef cattle	Condition of range
1935	47.83	12.09	5.32	78	82	77	91	96
1936	52.08	11.76	5.30	78	89	75	91	96
1937	68.34	20.04	6.40	78	117	127	110	96
1938	60.55	16.11	5.75	88	104	102	99	109
1939	62.47	18.86	6.40	81	107	120	110	100
1940	66.06	24.05	6.80	83	113	153	117	102
1941	74.84	24.06	8.25	92	128	153	142	114
1942	78.70	25.85	9.85	86	135	164	169	106
1943	91.28	26.86	11.05	80	157	170	190	99
1935-39	58.25	15.77	5.83	81	100	100	100	100
1940-43	77.72	25.20	8.99	85	133	160	154	105

^aStraight average of farm price of beef cattle reported for the two States by BAE.

^bAverage of first-of-month reports, November 1 of preceding year to October 1 of indicated year, inclusive, for crop reporting districts corresponding most nearly to the production area. See table 3 for source of range condition data and definition of the percentage scale used.

Table 15 - Cattle sales proceeds, Mountain area, Montana, farm price of beef cattle, and condition of range, annual averages, 1935-43

Year or period	Price received per head sold	Net sales proceeds per head inspected	Farm price, beef cattle, \$ per cwt., Montana ^a	Condition of range ^b (percent)	Index numbers, 1935-39 = 100			
					Price received per head sold	Net sales proceeds per head inspected	Farm price beef cattle	Condition of range
1935	49.68	13.15	5.70	73	96	86	95	92
1936	36.43	10.72	4.80	74	70	70	80	94
1937	55.80	16.54	6.50	73	108	108	108	92
1938	52.93	16.83	6.20	87	102	110	103	110
1939	63.83	19.01	6.80	89	123	125	113	113
1940	54.29	19.75	7.30	85	105	130	122	108
1941	68.13	26.31	8.80	89	132	173	147	113
1942	71.92	28.15	10.80	89	139	185	180	113
1943	92.90	31.52	11.40	88	180	207	190	111
1935-39	51.73	15.25	6.00	79	100	100	100	100
1940-43	71.81	26.43	9.58	88	139	173	160	111

^aPrice received by farmers for beef cattle, Montana, as computed by BAE.

^bAverage of first-of-month reports, November 1 of preceding year to October 1 of indicated year, inclusive, for crop reporting districts corresponding most nearly to the production area. See table 3 for source of range condition data and definition of the percentage scale used.

Taking table 13, Central Oregon area, for example, it may be noted that condition of ranges was slightly below average in 1937, but cattle prices per hundredweight were 11 percent above the 1935-39 average resulting in above-average returns per head sold, and average gross income per head inspected. In 1938, the status of the two "condition" factors were reversed, price per hundredweight being slightly below average, but condition of ranges were 111 percent of 1935-39 resulting lower returns per head sold but above average gross ranch income reflecting the favorable production condition. During 1940-43, range conditions averaged 104 of 1935-39, and prices averaged 151 resulting in returns per head sold of 133 and gross income from cattle of 155. Abstracted from the three tables, the following data permit comparison of the areas in 1940-43 averages on the 1935-39 base:

	Price per head sold	Cattle income per head inspected	Price of beef cattle	Condition of range
	<i>index numbers, 1935-39 = 100</i>			
Central Oregon area	133	155	151	104
Wallowa area	135	160	154	105
Mountain area, Montana	139	173	160	111

Operating Expense

Operating expense was computed by totaling all advances to the rancher during the year on his livestock loan plus any increase in his other debts. From this total of funds to be accounted for were deducted all amounts used for nonexpense purposes, such as debt payment or purchase of livestock, real estate, or other assets; the remainder was designated operating expense.

From 1938 to 1943 average operating expense per head inspected has increased in all areas in every year with few exceptions (table 16). The 1938 average of six areas was \$13.10 while the 1943 average was \$20.45, or 56 percent higher. Similarly, the six-area average for the 1940-43 period was 38 percent higher than the 1935-39 average. By areas, 1940-43 expense exceeded the 1935-39 average by 56 percent in Central Oregon, 48 percent in Mountain area, Montana, 42 percent in Southern Idaho, 40 percent in the Klamath area, 30 percent in the Wallowa area, but only 17 percent in the Plains, Montana, area.

During periods of rising ranch income ranch operating expense tends to rise with income. During 1935-43, this tendency has been due in part to a general rise in prices of all commodities, 1935-37 and 1939-43, which affected many items of ranch expense at the same time that it affected income. The tendency of expenses to increase when income is rising is due in part also to the inclination of ranch operators during years of favorable income to be more liberal in their expenditures for certain items, particularly family living expenses; also during periods of high gross and net income financing institutions tend to give less supervision

to the disbursement of ranch expense budgets and feel compelled in fewer instances to advise ranch borrowers to restrict expenditures to necessities directly connected with ranch output.

Comparisons between the 1935-39 and the 1940-43 periods in average ranch income and average expense in table 17 show that the increase in income from 1935-39 to 1940-43 was greater than the increase in expense in all areas. In the six-area average, operating expense absorbed 87 percent of total income during 1935-39 but in 1940-43, although expense averaged 38 percent higher, only 74 percent of total income was required to take care of operating expense.

Table 16 - Operating expense;^a area averages by years, 1935-43

Year or period	Klamath area, Oregon	Central Oregon area	Wallowa area	Southern Idaho area	Mountain area, Montana	Plains area, Montana	Average 6 areas
<i>dollars per head inspected</i>							
1935	11.54	8.18	10.72	10.04	10.75	10.89	10.35
1936	14.72	10.31	13.35	12.78	11.91	12.60	12.61
1937	14.46	10.59	17.25	12.37	13.71	12.32	13.45
1938	13.70	11.11	16.52	10.08	14.42	12.80	13.10
1939	15.17	12.70	17.68	13.61	14.36	13.15	14.44
1940	16.38	14.18	17.14	15.01	12.83	11.42	14.49
1941	18.53	15.10	18.90	17.35	17.46	15.10	17.07
1942	20.66	17.27	20.37	17.92	21.59	14.17	18.66
1943	22.46	19.64	22.02	16.62	25.06	16.88	20.45
1935-39	13.92	10.58	15.10	11.78	13.03	12.35	12.79
1940-43	19.51	16.55	19.61	16.73	19.24	14.39	17.67
1940-43 as a percent of 1935-39	140	156	130	142	148	117	138
<i>percent</i>							

^aOperating expense on cash outlay basis with no allowance for return on equity, labor of operator and family, or compensation for management other than family expense, including life insurance. Interest paid on all indebtedness is included. Period averages, 1935-39 and 1940-43, represent straight averages of the given annual averages.

In table 17 and some subsequent tables, three areas, Klamath, Wallowa, and Mountain, Montana, having both gross income and expense higher than the six-area average, both in the 1935-39 period and in the 1940-43 period, were grouped together. The other three areas averaged lower gross income and lower expense during both periods and were placed in the other group. Reasons for such grouping are graphically shown in chart A, page 4.

On the yearly record of each ranch an effort was made to distribute operating expense by purpose into categories: taxes, range costs, labor, etc. It was possible in most cases by the use of budget estimates submitted by the operator to distribute the larger part of the total expense

with a fair degree of accuracy. However, there was no definite check to determine that all funds advanced were applied to the purposes set forth in the budget. Extra-budget advances also were not always clearly ear-marked as to purpose. Thus, while total operating expense can be determined with a high degree of accuracy, the distribution according to purpose is based largely on estimates. Table 18 permits a comparison of the six areas for 1940-43 with respect to 11 items of expense. For convenience in summarizing the discussion of area differences, averages of three-area groups are also given, in which the three areas averaging somewhat higher than average expense are combined in one group and the three areas averaging somewhat lower than the six-area average in total operating expense comprise the second group. The principal items in which the Klamath, Wallowa, and Mountain, Montana, group averaged higher cash outlay were labor, range costs, and taxes. It should be noted, however, that the Wallowa area, although grouped with the higher cost areas, averaged only \$3.73 per head for labor which was not much higher than average outlay for labor (\$3.51) in the lower cost group of areas.

Table 17 - Total ranch income and total operating expense, annual average per head inspected, and ratio of expense to income, by areas, 1935-39 and 1940-43 periods^a

Area	1935-39			1940-43		
	Total income, \$ per head insp.	Operating expense, \$ per head insp.	Ratio: Expense to income (percent)	Total income, \$ per head insp.	Operating expense, \$ per head insp.	Ratio: Expense to income (percent)
Klamath	15.56	13.92	89	23.03	19.51	85
Wallowa	16.20	15.10	93	25.98	19.61	75
Mountain, Montana ..	15.48	13.03	84	27.00	19.24	71
Average, 3 areas	15.56	13.74	88	25.89	19.65	76
Central Oregon	13.73	10.58	77	21.37	16.55	76
Southern Idaho	13.37	11.78	88	22.76	16.73	74
Plains, Montana	13.87	12.35	89	23.09	14.39	62
Average, 3 areas	13.63	11.17	82	22.13	16.09	73
Average, 6 areas	14.70	12.79	87	23.92	17.67	74

^aAreas are here grouped according to similarity in total income and total operating expense in both 1935-39 and 1940-43. Six-area averages are straight averages of the respective area averages.

Total operating expense has increased steadily in all areas during 6 years, 1938-43, with few exceptions, as was pointed out in the discussion of the annual area data in table 16. Trends in 11 items of expense making up total operating expense during 9 years, 1935-43, may be observed in tables 19 and 20. Every kind of expense increased almost continuously during the 9 years except feed purchased and interest paid. Comment on changes in interest paid will be found on pages 23-24, as a part of the discussion on ranch indebtedness. Cash outlay for feed was higher during 1935-38 than in more recent years due to the cumulative effects of periods of unfavorable weather during 1931-37. Feed costs in 1943 were higher than in 1940-42, due to higher unit prices for most feeds, reflecting Nation-wide depletion of supplies accumulated during favorable crop years, 1939-42.

Table 18 - Itemized operating expense: Annual average, by areas, and average of area groups combined according to total operating expense, 1940-43 period

Item	Klamath area, Oregon	Wallowa area	Mountain area, Montana	Central Oregon area	Southern Idaho area	Plains area, Montana	Klamath, Wallowa, Mountain, Montana, combined ^a	Central Oregon, Southern Idaho, Plains, Montana, combined ^a
	<i>dollars per head inspected</i>							
Taxes.....	2.32	2.37	2.59	2.09	1.72	1.94	2.52	1.99
Pange, leases, permits.....	3.40	1.88	2.25	.96	1.25	1.32	2.47	1.09
Feed purchased.....	.91	1.22	.81	.76	2.60	.66	.93	1.05
Family ^b81	1.82	1.46	1.22	1.71	.67	1.36	1.18
Labor, hired.....	5.00	3.73	5.05	3.82	3.32	2.83	4.90	3.51
Provisions and supplies.....	1.26	1.91	1.75	1.72	1.26	1.78	1.66	1.65
Transportation, auto, truck.....	.67	.76	.72	.72	.72	.61	.71	.70
Equipment and repairs.....	1.19	.79	.99	1.13	1.02	1.34	1.04	1.16
Bulls purchased.....	1.09	.86	1.29	.96	.90	1.06	1.19	.98
Interest paid.....	1.51	2.46	1.59	2.00	1.62	1.70	1.75	1.86
Other operating expense.....	1.35	1.81	.74	1.17	.61	.48	1.12	.92
Total operating expense.....	19.51	19.61	19.24	16.55	16.73	14.39	19.65	16.09
	<i>number</i>							
Average no. cattle per ranch.....	668	436	731	465	711	378	-	-

^a Average of three areas weighted according to total number of cattle on ranches studied.

^b Includes life insurance.

Table 19 - Itemized operating expense, by years, 1935-43: Combined average of all ranches studied in Klamath, Wallowa, and Mountain, Montana, areas^a

Item	1935	1936	1937	1938	1939	1940	1941	1942	1943
Number of ranches.....	37	37	37	51	39	42	32	47	47
Average number of cattle per ranch.....	692	667	651	542	553	584	702	570	597
Operating Expense:	<i>dollars per head inspected</i>								
Taxes.....	.95	1.07	1.22	1.29	1.34	1.37	1.69	3.46	3.55
Range.....	1.06	1.43	1.59	1.64	2.19	1.97	2.50	2.45	2.97
Feed purchased.....	2.05	2.31	1.85	1.34	.95	.72	.94	.97	1.08
Family.....	.68	.94	1.16	1.20	1.19	1.05	1.92	1.23	1.24
Labor.....	2.09	2.53	2.96	3.20	3.48	3.35	4.17	5.07	7.00
Provisions and supplies.....	1.16	1.23	1.39	1.53	1.40	1.41	1.51	1.73	2.01
Transportation.....	.57	.41	.63	.77	.68	.68	.62	.70	.85
Equipment and repairs.....	.12	.14	.35	.34	.37	.62	1.30	1.00	1.25
Bulls purchased.....	.43	.59	.74	.41	.69	1.05	.81	1.44	1.47
Interest paid.....	1.69	1.91	2.06	2.22	2.06	1.86	1.61	1.96	1.55
Other operating expense.....	.37	.36	.72	.69	1.15	1.27	.97	1.12	1.12
Total operating expense.....	10.97	12.92	14.67	14.63	15.50	15.35	18.04	21.13	24.09
Index, 1935-39 = 100:	<i>index numbers</i>								
Total operating expense.....	80	94	107	106	113	112	131	154	175
Gross cattle income ^b	82	82	114	103	119	131	159	171	195

^aCombined three-area averages weighted according to number of cattle represented on ranches studied in the areas in the respective year.

^bSame as net sales proceeds, table 9. This net sales proceeds figure may be termed gross cattle income as it represents total income from cattle, with due allowance for inventory change, without deduction for any operating expense.

Table 20 - Itemized operating expense, by years, 1935-43: Combined average of all ranches studied in Central Oregon, Southern Idaho, and Plains, Montana, areas^a

Item	1935	1936	1937	1938	1939	1940	1941	1942	1943
No. of ranches	29	29	29	49	37	35	31	38	39
Average number of cattle per ranch	400	400	420	425	417	434	491	468	472
Operating Expense	<i>dollars per head inspected</i>								
Taxes	.68	1.13	1.03	1.11	1.23	1.18	1.49	2.32	2.98
Range	.55	.78	.87	.85	.92	1.06	1.21	.98	1.10
Feed purchased	1.76	2.37	1.68	1.26	1.18	.86	.97	.90	1.49
Family	.71	.83	.83	.92	1.31	1.18	1.18	1.07	1.28
Labor	1.30	1.65	2.10	2.29	2.75	2.80	3.19	3.83	4.21
Provisions and supplies	1.19	1.36	1.52	1.40	1.50	1.52	1.68	1.78	1.62
Transportation	.34	.41	.43	.49	.56	.81	.65	.64	.69
Equipment and repairs	.09	.11	.24	.22	.41	.94	1.33	1.53	.84
Bulls purchased	.36	.35	.37	.37	.49	.94	.84	.76	1.36
Interest paid	1.80	1.96	1.89	1.71	1.70	1.82	1.90	1.87	1.87
Other operating expense	.33	.41	.34	.46	.90	.74	1.08	.88	.99
Total operating expense	9.11	11.36	11.35	11.08	12.95	13.85	15.52	16.56	18.43
Index, 1935-39 = 100:	<i>index numbers</i>								
Total operating expense	82	102	102	99	116	124	139	148	165
Gross cattle income ^b	86	89	100	104	120	128	156	180	177

^aCombined three-area averages weighted according to number of cattle represented on ranches studied in the areas in the respective year.

^bSame as net sales proceeds, table 9. This net sales proceeds figure may be termed gross cattle income as it represents total income from cattle, with due allowance for inventory change, without deduction for any operating expenses.

Index numbers at the bottom of table 19 representing total expense and gross cattle income (sales proceeds adjusted for inventory change and cost of cattle purchased) show that income changes did not get far out of line with expense changes up to 1940 on the Klamath, Wallowa, and Mountain, Montana, group of ranches. In the 4 years, 1940-43, however, the income index steadily has been 17 to 28 points higher than the expense index. Similar index numbers for the Central Oregon, Southern Idaho, and Plains, Montana, ranches (table 20) show that income changes continued approximately parallel to expense changes through 1940. During 1941-42, however, income rose 52 points while expense rose only 24 points. But this 1941-42 trend was completely reversed in 1943 when income declined 3 points while expense rose 17 points. Variations in rate of change in expense and gross income and their combined effect on net income are graphically shown in chart A on page 4.

Figures on operating expense developed in this study should be carefully distinguished from cost of production figures. Except for interest paid on borrowed funds, the expense total includes no allowance for return on investment in livestock, ranch real estate, or equipment. Compensation for management is included only to the extent of family expense. A true cost of production figure would include charges for herd depreciation and death loss which in this analysis have been treated as deductions from income in the item of inventory change which entered into net sales proceeds as an adjustment.

Indebtedness of Cattle Ranch Operators

Prominence of interest as an item of operating expense (tables 18, 19, and 20) points to the importance of considering a rancher's total debt when analyzing his ability to make financial progress and projecting the probable future trend of his business. During 1935-39, on all ranches studied in the Klamath, Wallowa, and Mountain, Montana, areas, interest paid equalled 13 percent of gross income and 14 percent of total operating expense, and amounted to \$1.99 per head inspected compared with \$1.82 per head average net financial progress (table 21). In the other three areas, characterized throughout the period studied by somewhat lower averages for both gross income and total expense, interest constituted an even larger percentage of total income and of total expense (table 22). Because of the fixed character of interest charges and the tendency of ranch indebtedness to remain stationary or even accumulate during low net income periods, interest costs tend to be highest during periods when gross ranch income (with which to pay interest and all other expenses) is lowest. Thus a ranch debt which appears easy to carry during years of favorable income may become a serious handicap in less favorable years.

The amount of debt that a ranch can carry out of income over a period of years varies widely among ranches according to variations in production, income, and expense. In extending credit to range livestock producers, financing institutions consider the rancher's total debt to determine whether interest charges will be an excessive burden on probable gross income, and also whether the amount of the debt leaves the

Table 21 - Interest paid compared with income, expense, and net financial progress, by years, 1935-43; combined average of Klamath, Wallowa, and Mountain, Montana, areas^a

Year or period	Number of ranches	Gross income ^b	Total operating expense including interest	Net financial progress	Interest paid	Interest paid as a percent of	
						(a) Gross income	(b) Total expense
		dollars per head inspected				percent	
1935	37	12.77	10.97	1.80	1.69	13	15
1936	37	12.71	12.92	-.21	1.91	15	15
1937	37	17.59	14.67	2.92	2.06	12	14
1938	51	16.14	14.63	1.51	2.22	14	15
1939	39	18.58	15.50	3.08	2.06	11	13
1940	42	20.37	15.35	5.02	1.86	9	12
1941	32	24.87	18.04	6.83	1.61	6	9
1942	47	27.25	21.13	6.12	1.96	7	9
1943	47	31.06	24.09	6.97	1.55	5	6
1935-39	-	15.56	13.74	1.82	1.99	13	14
1940-43	-	25.89	19.65	6.24	1.75	7	9
1935-43	-	20.15	16.37	3.78	1.88	9	11

Table 22 - Interest paid compared with income, expense, and net financial progress, by years, 1935-43; combined average of Central Oregon, Southern Idaho, and Plains, Montana, areas^a

Year or period	Number of ranches	Gross income ^b	Total operating expense including interest	Net financial progress	Interest paid	Interest paid as a percent of	
						(a) gross income	(b) total expense
		dollars per head inspected				percent	
1935	29	11.69	9.11	2.58	1.80	15	20
1936	29	12.11	11.36	.75	1.96	16	17
1937	29	13.66	11.35	2.51	1.89	14	17
1938	49	14.15	11.08	3.07	1.71	12	15
1939	37	16.31	12.95	3.36	1.70	10	13
1940	35	17.34	13.85	3.49	1.82	10	13
1941	31	21.65	15.52	6.13	1.90	9	12
1942	38	25.02	16.56	8.46	1.87	7	11
1943	39	24.50	18.43	6.07	1.87	8	10
1935-39	-	13.63	11.17	2.46	1.81	13	16
1940-43	-	22.13	16.09	6.04	1.86	8	12
1935-43	-	17.40	13.36	4.04	1.84	11	14

^aCombined three-area averages weighted according to number of cattle represented on the ranches studied in each area in the respective year. Period averages are straight averages of the respective annual averages.

^bGross income represents sales proceeds from cattle adjusted for inventory change and cost of cattle purchased plus a small amount of other income.

rancher a sufficient equity in the business to be an inducement to him to continue to operate it in the event a series of unfavorable years is encountered. A difference of \$10 in debt per head, figured at 4 percent, means a difference of 40 cents yearly per head operating expense, and a consequent difference of 40 cents per head in realizable net financial progress.

Total liabilities at the close of the 1943 operating season on 86 ranches in the six areas averaged \$29.66 per head inspected (table 23). Liabilities averaged highest on the 9 ranches in the Wallowa area at \$41.41 per head, and lowest on the 31 ranches in the Mountain, Montana, area at \$21.69 per head. Individual ranches in all areas varied widely in total liabilities. Among the 86 ranches only 41 were included in the range \$20.00 to \$39.99 while 12 ranches had total liabilities of less than \$10.00 per head and 2 ranches had total per head indebtedness of \$50.00 and over. It is naturally to be expected that total liabilities as of any date will vary greatly among ranches. A ranch operated largely on leased range and leased facilities may normally be expected to have only one-fourth to one-half the debt necessary for a ranch which is operated entirely on owned facilities and largely on owned range land. Liabilities of a young rancher, with a normal expectation of 20 to 40 years of active ranch operation and supervision, may easily be several times as great as the debt of a rancher aged 60 to 70 after a long span of years of reasonably efficient ranch operation and financial management.

Livestock loan of the 86 ranches, fall 1943, averaged \$14.29 per head inspected. Area averages ranged from \$8.18 per head in Southern Idaho to \$19.03 per head in the Klamath area. On the individual ranches in an area, amount of livestock loan might be expected to be much more uniform than total liabilities since it is less likely to vary according to whether the ranch real estate is largely owned or largely leased.

Table 24 shows unexpectedly wide variations in livestock loan among ranches, particularly in the Central Oregon, Wallowa, and Mountain, Montana, areas; in each of these areas the ranches ranged all the way from less than \$5 to \$30 and over.

In the six-area average of all ranches studied, by years, the fall 1943 financial statements indicated the lowest average indebtedness of the 10-year period beginning with fall 1934.¹ Fall 1943 indebtedness was lowest both in livestock loan and in total liabilities. From an average of \$36.75 in fall 1935 the six-area average increased slightly from year to year, reaching \$38.98 in the fall of 1938. From that time there was a moderate year-to-year decrease, average indebtedness sinking to the lowest point in the decade in fall 1943 with total liabilities at \$29.66 per head inspected. The annual six-area average of livestock loan, per head inspected, fluctuated very little from fall 1934 to fall 1939, remaining within 7 percent of the \$16.31 average of the six yearly figures. In the next 2 years the average loan increased moderately to

¹ See table 46, page 52, for annual area and six-area averages of total liabilities and livestock loan from fall 1934 to fall 1943. Tables 34 to 39 also give annual area averages of total liabilities broken down into real estate mortgage debt, livestock loan, and other debt.

\$18.76 per head in fall 1941 and then declined to the low point of the 10-year period, fall 1943, when the six-area average was \$14.29.

Changes in ranch operators' liabilities are of particular interest when the debt history of a group of ranch outfits can be traced over a period of years, the individual ranches composing the group remaining identical through the period. An analysis of this kind has been set up in tables 25 and 26, covering 13 groups of ranches in four areas having two to four successive annual financial statements available for study during

Table 23 - Total liabilities, fall 1943: Number of ranches, by areas, having stated amounts of total liabilities per head inspected^a

Dollars per head inspected	Klamath area, Oregon 7 ranches	Central Oregon area 22 ranches	Wallowa area 9 ranches	Southern Idaho area 5 ranches	Mountain area, Montana 31 ranches	Plains area, Montana 12 ranches	Total 6 areas 86 ranches
<i>number of ranches</i>							
Under \$10.00	-	3	-	1	7	1	12
10.00 - 19.99	1	2	-	2	4	3	12
20.00 - 29.99	2	5	2	-	7	2	18
30.00 - 39.99	3	7	1	-	7	5	23
40.00 - 49.99	1	2	4	2	4	1	14
50.00 - 59.99	-	3	1	-	2	-	6
60.00 and over	-	-	1	-	-	-	1
<i>dollars per head inspected</i>							
Average	34.54	27.38	41.41	22.88	21.69	30.08	29.66
Median	31.28	30.12	43.76	15.10	27.91	27.20	-

^aTotal liabilities includes livestock loan as defined in table 24, ranch real estate debt, and all other debt incurred in connection with the ranch operation.

Table 24 - Livestock loan, fall 1943: Number of ranches, by areas, having stated amounts of livestock loan per head inspected^a

Dollars per head inspected	Klamath area, Oregon 7 ranches	Central Oregon area 22 ranches	Wallowa area 9 ranches	Southern Idaho area 5 ranches	Mountain area, Montana 31 ranches	Plains area, Montana 12 ranches	Total 6 areas 86 ranches
<i>number of ranches</i>							
Under \$5.00	-	1	1	2	3	-	7
5.00 - 9.99	-	7	2	1	9	1	20
10.00 - 14.99	2	5	1	1	6	5	20
15.00 - 19.99	3	5	-	-	6	4	18
20.00 - 24.99	1	2	1	1	3	2	10
25.00 - 29.99	1	1	1	-	3	-	6
30.00 and over	-	1	3	-	1	-	5
<i>dollars per head inspected</i>							
Average	19.03	14.02	15.56	8.18	12.59	16.36	14.29
Median	14.01	13.32	22.12	6.94	12.46	14.80	-

^aAmount of livestock loan represents unpaid balance at close of operating season after proceeds of cattle sales of the respective year have been applied to reduce the debt. It includes accrued expense applicable to the 1943 production year just closed, including interest on the livestock loan to date of fall renewal.

the period from fall 1937 to fall 1943. Changes in total liabilities are more significant than changes in livestock loan since total liabilities data are not subject to variations caused by shifts between various kinds of debt which may cause considerable fluctuations in average livestock loan. Even though the fall 1937 to fall 1943 debt history in these tables requires piecing together the history of several groups in an area, this process appears to be feasible because changes for the different groups in an area are shown generally to have been in the same direction. In the Klamath area, for example, total debt of 13 ranches

Table 25 - Total liabilities and livestock loan: Annual average, groups of identical ranches, Klamath area and Central Oregon area, 1938-43

Approximate time of financial statements	Klamath area			Central Oregon area		
	13 ranches having 1938-40 loan history	9 ranches having 1940-42 loan history	7 ranches having 1942-43 loan history	22 ranches having 1938-40 loan history	11 ranches having 1940-42 loan history	19 ranches having 1942-43 loan history
	<i>total liabilities in dollars per head inspected</i>					
Fall 1937	34.78	-	-	35.76	-	-
Fall 1938	35.34	-	-	34.78	-	-
Fall 1939	34.46	38.76	-	36.48	38.98	-
Fall 1940	32.34	36.98	-	38.18	40.20	-
Fall 1941	-	31.81	36.75	-	35.94	35.92
Fall 1942	-	33.40	39.19	-	29.70	30.47
Fall 1943	-	-	34.54	-	-	28.45
	<i>livestock loan in dollars per head inspected</i>					
Fall 1937	19.02	-	-	17.78	-	-
Fall 1938	19.41	-	-	17.14	-	-
Fall 1939	20.64	24.56	-	16.02	17.53	-
Fall 1940	20.78	24.92	-	16.67	16.84	-
Fall 1941	-	20.08	23.22	-	16.62	16.75
Fall 1942	-	19.78	25.17	-	12.24	13.07
Fall 1943	-	-	19.03	-	-	14.47

Table 26 - Total liabilities and livestock loan: Annual average, groups of identical ranches, Wallowa area and Mountain area, Montana, 1938-43

Approximate time of financial statements	Wallowa area			Mountain area, Montana			
	12 ranches having 1938-40 loan history	8 ranches having 1940-42 loan history	8 ranches having 1942-43 loan history	13 ranches having 1938-40 loan history	5 ranches having 1940-41 loan history	9 ranches having 1941-42 loan history	20 ranches having 1942-43 loan history
	<i>total liabilities in dollars per head inspected</i>						
Fall 1937	46.16	-	-	41.13	-	-	-
Fall 1938	43.87	-	-	39.80	-	-	-
Fall 1939	42.24	44.76	-	32.48	34.69	-	-
Fall 1940	42.53	47.32	-	28.68	31.86	35.23	-
Fall 1941	-	41.72	43.02	-	25.84	27.85	30.97
Fall 1942	-	46.01	44.61	-	-	25.04	29.49
Fall 1943	-	-	40.99	-	-	-	22.65
	<i>livestock loan in dollars per head inspected</i>						
Fall 1937	15.71	-	-	17.73	-	-	-
Fall 1938	16.27	-	-	19.64	-	-	-
Fall 1939	17.31	19.60	-	15.62	19.33	-	-
Fall 1940	18.19	20.58	-	12.39	16.80	19.26	-
Fall 1941	-	17.44	16.16	-	12.77	15.97	17.33
Fall 1942	-	19.91	18.08	-	-	11.53	14.37
Fall 1943	-	-	12.47	-	-	-	13.02

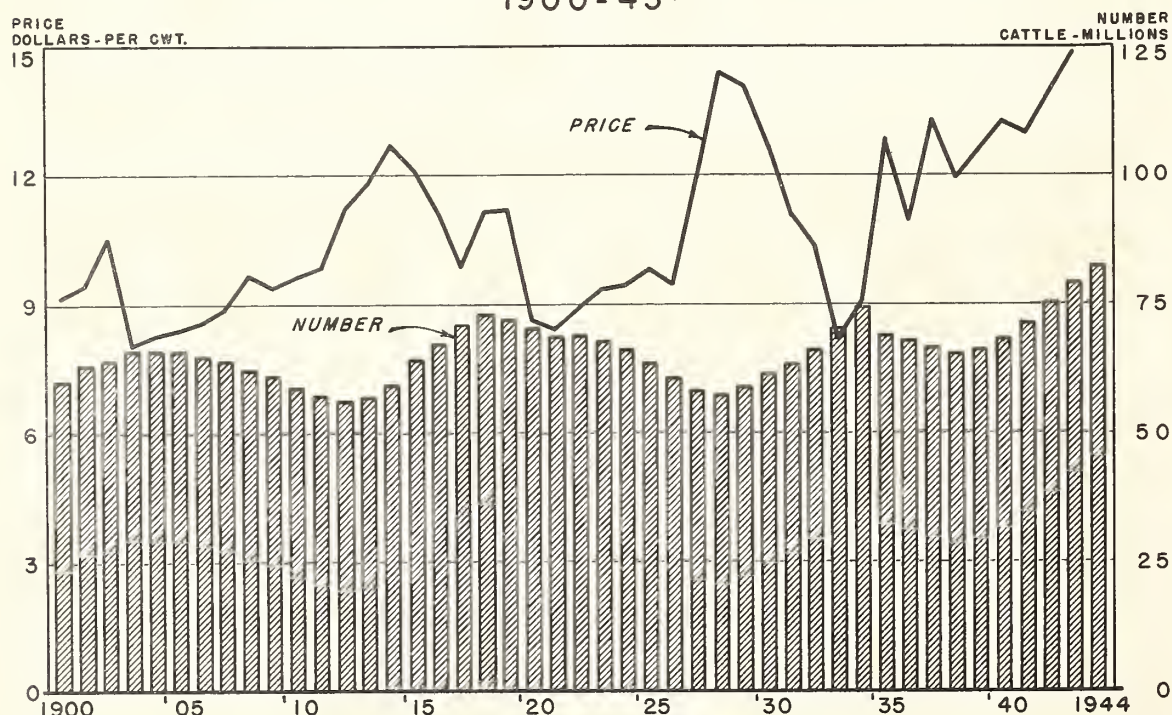
(1938-40 group) declined \$2.12 per head from fall 1939 to fall 1940. At the same time total debt of 9 ranches (1940-42 group), although at a slightly higher level, also declined by \$1.78, a not greatly different amount. From fall 1941 to fall 1942 total debt of 9 ranches (1940-42 group) increased \$1.59 and at the same time total debt of the third group (1942-43 group) although at a higher level, also increased \$2.44, indicating adjustment in the same direction.

Cycles in Cattle Production and Price

Rather definite cycles of production and price are experienced in the cattle industry. Certain features of these cycles of particular interest to range cattle producers are illustrated by the chart on this page. Periods of liquidation of cattle numbers lasting 4 to 10 years accompanied and followed the periods of low market prices, 1903-06, 1920-22, and 1933-34. Favorable market prices of 1912-14, 1927-30, and 1937-40 ushered in 6-year periods of restocking or building up numbers of cattle on farms and ranches. In the present period of all-time high cattle numbers, producers are concerned with the fact that the three previous peaks in numbers brought with them periods of extremely depressed market prices for range cattle.

Alternating periods of expansion and reduction of cattle numbers in the United States in the past half century are further analyzed in table 27. Periods of restocking or expanding farm and ranch inventories have averaged about 7 years in length and have added about 17 million head in numbers. The periods of liquidation have been less uniform, have averaged

CHART D
NUMBER OF CATTLE ON FARMS AND MARKET PRICE OF BEEF CATTLE,
1900-43*



*NUMBER OF ALL CATTLE ON FARMS IN THE UNITED STATES, JANUARY 1; ANNUAL AVERAGE PRICE OF BEEF CATTLE AT CHICAGO ADJUSTED FOR CHANGES IN PRICE LEVEL, 1926=100.

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about 7 years in length and about 11.8 million head reduction in number. Changes in the farm value of cattle which accompanied the expansion and liquidation periods are shown in table 28. The periods of declining values have averaged 4 years and the amount of decline in value per head had been 31 percent to 70 percent of the peak per head value. Periods of rising per head farm values of cattle have averaged 10 years in length. Peak values per head have been two to three times the preceding low ebb in values.

For the individual cattle producer these rather definite periodic fluctuations mean periods of favorable income alternating with periods when the beef cattle business is less profitable and operating losses may be incurred. The financial progress possible in the years of favorable production and price conditions can be used to advantage by the producer to reduce his debt and to bring his cattle inventory into the best possible balance with the facilities available to him on an economical basis.

Uses Made of Net Income by Cattle Ranch Operators

Because of alternating periods of profits and losses experienced in the cattle industry, the individual producer has been urged, as a general policy, to reduce his debt burden during years of favorable income, rather than use net income for the purchase of real estate or other assets or for the expansion of cattle numbers beyond the normal carrying capacity of available range, pasture, hay and feed cropland, and other facilities. By thus improving his business and increasing his equity in it during the years of average and better-than-average production and price conditions, he will be able to survive the unfavorable years or periods of years in which profits may vanish and net financial loss may be inevitable. There will be cases, of course, in which expansion is necessary to balance cattle numbers with range capacity, or perhaps to purchase real estate to retain the use of certain range, or increase the efficient use of it. The general policy of priority of debt reduction must be applied on a case basis and the facts pertaining to each ranch analyzed to determine whether the set-up is in balance or whether expansion or purchase of assets is justified.

Table 27 - Change in number of cattle on farms in the United States on January 1, 1896-1944

Year of lowest number, each cycle	Lowest number, millions	Number of years of increasing cattle numbers ^a	Increase in cattle numbers, millions ^a	Year of peak in cattle numbers	Peak number, millions	Number of years of decreasing cattle numbers	Decrease in cattle numbers, millions ^b
1896	49.2	8	17.2	1904	66.4	8	10.7
1912	55.7	6	17.3	1918	73.0	10	15.7
1928	57.3	6	17.0	1934	74.3	4	9.1
1938	65.2	6	17.0	1944	82.2	-	-

^aFollowing low year indicated in first column.

^bFollowing the indicated peak year.

^cOn this line the 6 years of increasing numbers, 17.0 million increase and 82.2 million for the peak in numbers, are based on the assumption that January 1, 1944, will mark the limit of the present upswing, which may or may not prove correct.

Table 28 - Change in January 1 per head farm value of cattle in the United States,
1900-1943

Year of highest per head value, each cycle	Value per head at peak	Number of years of declining value ^a	Amount of decline in value per head ^a	Year of lowest per head value, each cycle	Value per head at low point	Number of years of rising value ^b	Amount of increase in value per head ^b
1900	\$26.50	5	\$8.11	1905	\$18.39	14	\$36.26
1919	54.65	3	24.26	1922	30.39	7	28.08
1929	58.47	5	40.69	1934	17.78	9	51.78
1943	69.56	-	-				

^a Following high year named in the first column.

^b Following low year named in the column at the left.

Apparent use of net income, 1938-43, by ranches included in the present study is analyzed in table 29 based on groups of ranches in four areas having continuous 3-year or 2-year loan histories through 1938-40, 1940-42, or 1942-43. A method of interpreting data in this table may be illustrated by using the figures for the Klamath area, 1938-40. The 13 ranches averaged \$1.20 per head annual net financial progress and increased total debt \$0.05 per head annually, making a total of \$1.25 to be accounted for in asset changes. The other figures in the table account for this \$1.25 by showing \$0.06 represented in increased livestock inventory and \$1.19 represented by the purchase of real estate and other assets. These ranches did reduce debt other than livestock loan by \$1.11 per head, but this entire reduction and more too was offset by a \$1.16 average annual increase in livestock loan balances. In none of the four areas was debt reduction apparent as a major use of net income, 1938-40. Besides the Klamath area ranches, those of the Central Oregon and Wallowa areas also increased their total debt while in the Mountain, Montana, area debt reduction was equivalent to only 16 percent of annual net financial progress.

During 1940-42, debt reduction was an apparent major use of net income on nine Mountain area, Montana, ranches which reduced total debt by \$5.10 annually per head inspected, this reduction being equivalent to 58 percent of the relatively high average net financial progress. Eleven ranches in Central Oregon, 1940-42, reduced total debt by the equivalent of 24 percent of net income. Eight ranches in the Wallowa area, however, increased their total debt by \$3.95 per head, using debt increases plus \$6.87 per head net income to finance a large increase in livestock inventory and a large investment in other assets. In 1942-43, 39 ranches in the Mountain, Montana, and Central Oregon areas used 43 to 46 percent of relatively high net income for debt reduction.

Since changes in the items of debt, cattle inventory, and other assets may be either plus or minus, offsetting changes made by individual ranches may cancel out and thus obscure trends which may exist. For example, in a certain area for a certain period, one group of ranches may reduce debts out of profits and another group increase debts by an offsetting amount, investing both proceeds of debt increases and profits in other assets. The net result, in terms of area average, might appear as no change in debts, although a great change had occurred on most of the ranches. This difficulty is in part overcome in constructing chart E,

Table 29 - Apparent use of net income by cattle ranch operators, area averages per year, selected periods, 1938-43^a

Net income used for	1938-40 Period				1940-42 Period				1942-43 Period			
	Klamath area, Oregon 13 rchs.	Central Oregon area 22 rchs.	Wallowa area 12 rchs.	Mountain area, Montana 13 rchs.	Klamath area, Oregon 9 rchs.	Central Oregon area 11 rchs.	Wallowa area 8 rchs.	Mountain area, Montana 9 rchs.	Klamath area, Oregon 7 rchs.	Central Oregon area 19 rchs.	Wallowa area 8 rchs.	Mountain area, Montana 20 rchs.
Reduction of live-stock loan	-1.16	.31	-1.71	.32	.31	.98	-1.63	3.87	1.91	.86	1.03	1.64
Reduction of other debt	1.11	-1.29	.64	.44	-.62	.29	-2.32	1.23	-1.18	2.33	-2.33	1.63
Subtotal, debt reduction	-.05	-.98	-1.07	.76	-.31	1.27	-3.95	5.10	.73	3.19	-1.30	3.27
Increase in cattle inventory	.06	.16	1.86	3.02	-.64	1.65	4.30	.52	-.02	1.09	2.53	.99
Purchase of real estate and other assets ^c	1.19	3.54	2.64	1.12	3.21	2.28	6.52	3.11	3.66	2.63	6.13	3.37
Total: net financial progress	1.20	2.72	3.43	4.90	2.26	5.20	6.87	8.73	4.37	6.91	7.36	7.63
Debt reduction as a percent of net financial progress	-4	-36	-31	16	-14	24	-57	58	17	46	-18	43

^aAn analysis of apparent use of net income as shown by net changes in average asset and debt position of ranch operators having continuous loan histories through the indicated periods. Two areas, Southern Idaho and Plains, Montana, are omitted from this analysis because of lack of a sufficient number of continuous loan histories through the respective periods.

^bData for this area cover 2-year 1941-42 period only.

^cMinus numbers on this line indicate increase of average debt instead of debt reduction.

^dMinus numbers on this line indicate average cattle inventory was reduced.

^eIncludes cash withdrawn from the ranch business for non-ranch uses.

based on number of ranches using stated portions of net income for debt reduction versus increasing assets. According to the chart, the total number of ranches studied making financial progress was about equally divided in 1942 between those using half to all of net income for debt reduction and those using over half to all of net income for increasing assets. Similar data on debt reduction as a major use of net income are presented on an area basis in table 30.

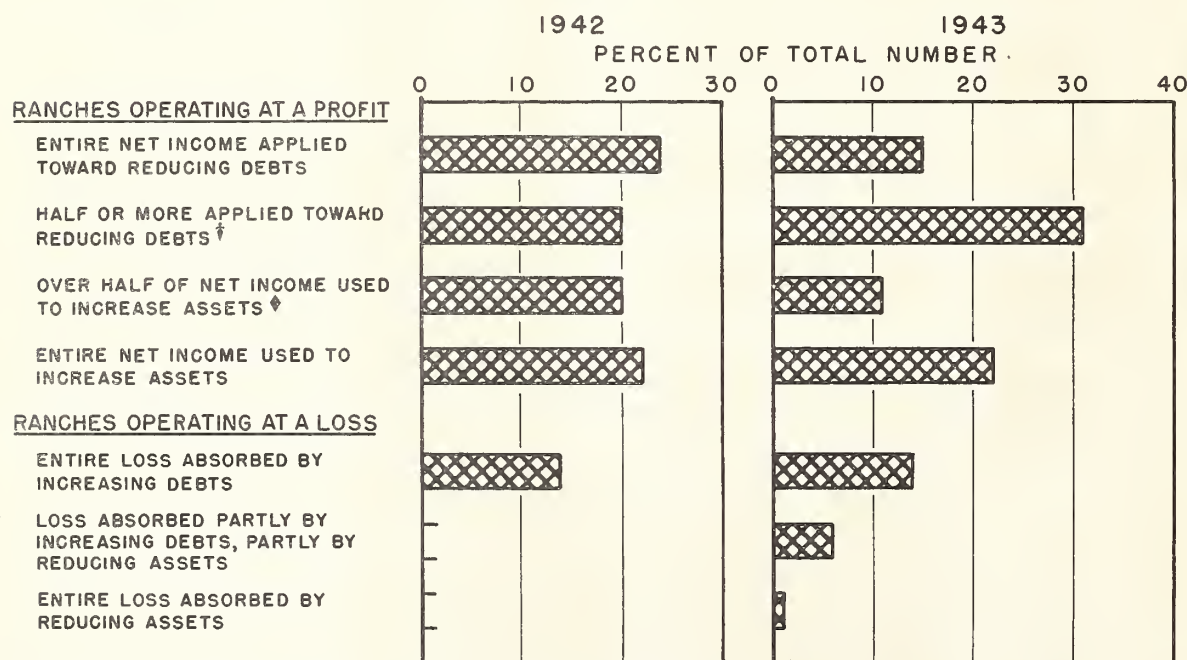
Table 30 - Debt Reduction: Percent of total number of ranch operators, by areas, using one-half to all of net income for this purpose, 1942 and 1943

	1942	1943
	<i>percent</i>	
Klamath area (11, 7) ^a	27	57
Central Oregon area (22, 22).....	41	27
Wallowa area (11, 9).....	45	44
Southern Idaho area (3, 5).....	67	60
Mountain area, Montana (25, 31).....	56	49
Plains area, Montana (13, 12).....	41	67
Total - 6 areas (85, 86).....	44	46

^aFigures in parentheses indicate number of ranches studied in 1942 and 1943, respectively.

CHART E

DEBT REDUCTION VERSUS INCREASING ASSETS AS A USE OF NET INCOME BY CATTLE RANCH OPERATORS 1942 AND 1943*



* Based on 85 ranches in 6 areas, 1942, and 86 ranches, 6 areas, 1943. Assets include real estate, livestock inventories, other assets, and cash withdrawn from the ranch business for non-ranch uses.

† This category is to be understood as not including ranches applying entire net income toward debt reduction.

‡ This category is to be understood as not including ranches using entire net income to increase assets.

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Further information regarding debt reduction and changes in cattle inventories and other assets is presented in detail in table 31. In this table annual averages for all ranches studied in five areas throughout the 1935-43 period are shown with respect to yearly changes in the asset and debt position of the operators. On 11 ranches in the Wallowa area in 1942 for example, nearly all net financial progress (\$6.22 per head) was represented by increased livestock inventory (\$6.02) while other assets were acquired equivalent to \$7.95 per head, financed largely by increasing livestock loan \$3.10 per head and increasing other debt \$4.65 per head. Fortunately, another year favorable to financial progress was experienced by this area in 1943 permitting some reduction in total debt.

A graphic summary of data in table 31 is presented in chart F. To simplify the somewhat complex year-to-year fluctuations, often in diverse directions, the annual averages shown in table 31 have been combined into 3-year periods representing straight averages of the yearly per head figures. Change in livestock loan and change in other debt have been combined into one net figure representing change in total indebtedness. The following area and period comparison may be noted from chart F: In the Klamath area, during three periods, 1935-37, 1938-40, and 1941-43, purchase of other assets including real estate was the most important use of disposable income; debt reduction did not become important until in 1941-43 when almost half of disposable income was devoted to that purpose. In the Central Oregon area, expansion of cattle inventories and purchase of other assets constituted the major use of net income in the three periods; in this area also, debt reduction became an important use of net income in 1941-43. In the Wallowa area, debt reduction was not important in any of the three periods; purchase of other assets absorbed a major portion of disposable income in each period; during 1938-40 and 1941-43 debts were increased moderately and cattle inventories expanded following considerable liquidation during 1935-37. In the Mountain area of Montana, a larger part of disposable income was allocated to debt reduction than to acquisition of other assets in all three periods; after considerable liquidation of cattle inventories, 1935-37, a large part of net income was represented in expansion of cattle herds, 1938-40. The Mountain, Montana, area was the only one of the five areas no part of whose disposable income represented debt increase in any of the three periods. In the Plains area of Montana, expansion of cattle inventory was the major allocation of disposable income in 1935-37 and 1938-40; in 1935-37 disposable income consisted entirely of debt increases; during 1941-43, the Plains area ranches devoted a relatively large net income, plus proceeds of a substantial increase in other debt to expansion both in cattle inventories and in real estate and other assets.

Taken altogether, the tables and charts pertaining to indebtedness and apparent use of income indicate that a large proportion of the unusually high net gain of 1940-43 was invested in real estate, other assets (including cash withdrawn for nonranch uses), and expansion of cattle inventories. It may later appear that the proportion of income used for expansion by many operators was greater than justified. In expanding

Table 31 - Annual changes in assets and debts of ranch operators, and annual net financial progress, by areas, 1935-43

Area and Year	Number ranches included	Change in cattle inventory ^a	Change in other assets	Change in livestock loan	Change in other debts	Net financial progress
<i>dollars per head inspected</i>						
Klamath area						
1935	6	-5.35	.48	-5.11	-.09	.23
1936	6	2.84	2.58	3.34	-.56	2.64
1937	6	1.57	1.90	1.40	-.47	2.54
1938	13	-1.59	1.27	-.31	-.41	.40
1939	13	.63	1.15	1.44	-1.96	2.30
1940	13	1.20	1.16	2.41	-.99	.94
1941	11	-2.83	1.32	-4.67	-.36	3.52
1942	11	-.03	6.62	.86	2.44	3.29
1943	7	.68	.59	-6.37	1.30	6.34
Central Oregon area						
1935	12	.27	.05	-3.45	-.35	4.12
1936	12	1.42	3.30	.26	2.51	1.95
1937	12	1.76	1.77	1.19	-1.01	3.37
1938	26	.96	1.20	-.28	-.78	3.22
1939	22	-1.21	4.85	-1.62	2.19	3.07
1940	22	1.88	4.30	1.67	2.37	2.14
1941	20	2.07	1.59	.26	-1.76	5.16
1942	22	.85	1.62	-4.19	-1.37	8.03
1943	22	1.13	3.14	1.81	-2.70	5.16
Wallowa area						
1935	10	-1.17	.50	-2.36	.10	1.59
1936	10	-1.07	1.07	1.04	.41	-1.45
1937	10	-1.13	4.90	-3.01	3.35	3.43
1938	14	-.29	.13	1.42	-1.64	.06
1939	12	2.46	2.23	2.87	-.04	1.86
1940	16	2.44	4.76	.38	-.60	7.42
1941	10	-.11	2.62	-2.82	-.98	6.31
1942	11	6.02	7.95	3.10	4.65	6.22
1943	9	-1.94	4.90	-3.71	1.14	5.53
Mountain area, Montana						
1935	21	-.51	.57	-1.11	-1.54	2.71
1936	21	-2.58	1.70	.32	-.11	-1.09
1937	21	.31	.25	-.34	-2.02	2.62
1938	24	1.28	1.05	2.39	-2.95	2.89
1939	14	1.82	.44	-1.61	-.93	4.80
1940	13	3.15	2.06	-2.39	.55	7.05
1941	11	-.04	2.13	-3.04	-3.97	9.10
1942	25	1.52	4.24	-2.51	.88	7.39
1943	31	1.36	2.48	.27	-3.93	7.50
Plains area, Montana						
1935	6	2.18	.72	5.91	-2.94	-.07
1936	6	-.58	.69	.69	1.35	-1.93
1937	6	2.53	.09	-.57	1.21	1.98
1938	10	3.03	.02	1.05	-1.53	3.53
1939	10	4.63	1.57	1.46	.67	4.07
1940	8	3.03	.47	-1.44	-4.54	9.48
1941	7	11.24	8.61	8.07	3.45	8.33
1942	13	3.26	10.10	-3.48	6.52	10.32
1943	12	2.22	1.27	-.88	-2.29	6.66

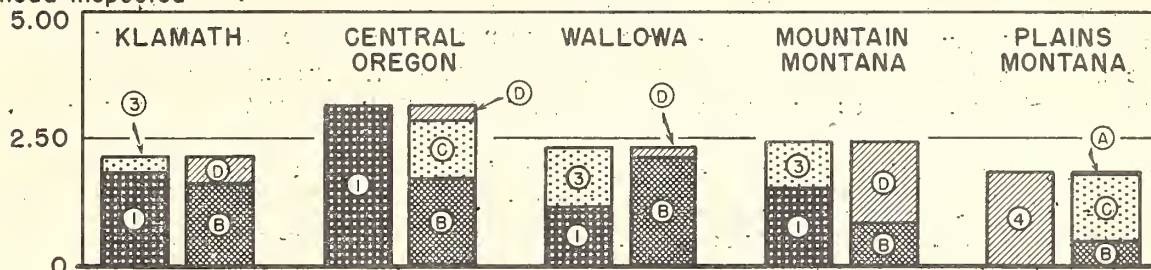
^aOn basis of fixed values per head for each class and age group of cattle.

CHART F

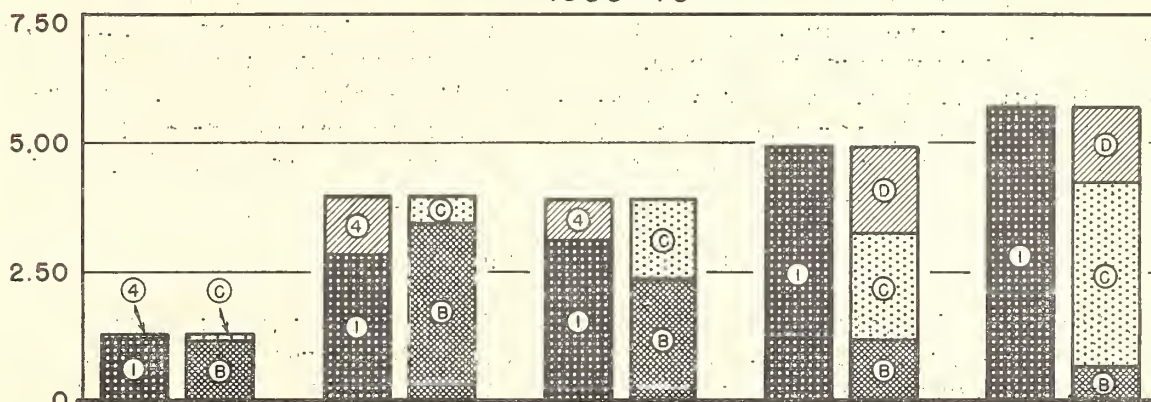
SOURCE AND APPARENT DISPOSITION OF DISPOSABLE INCOME BY CATTLE RANCH OPERATORS, 1935-43

DOLLARS per head inspected

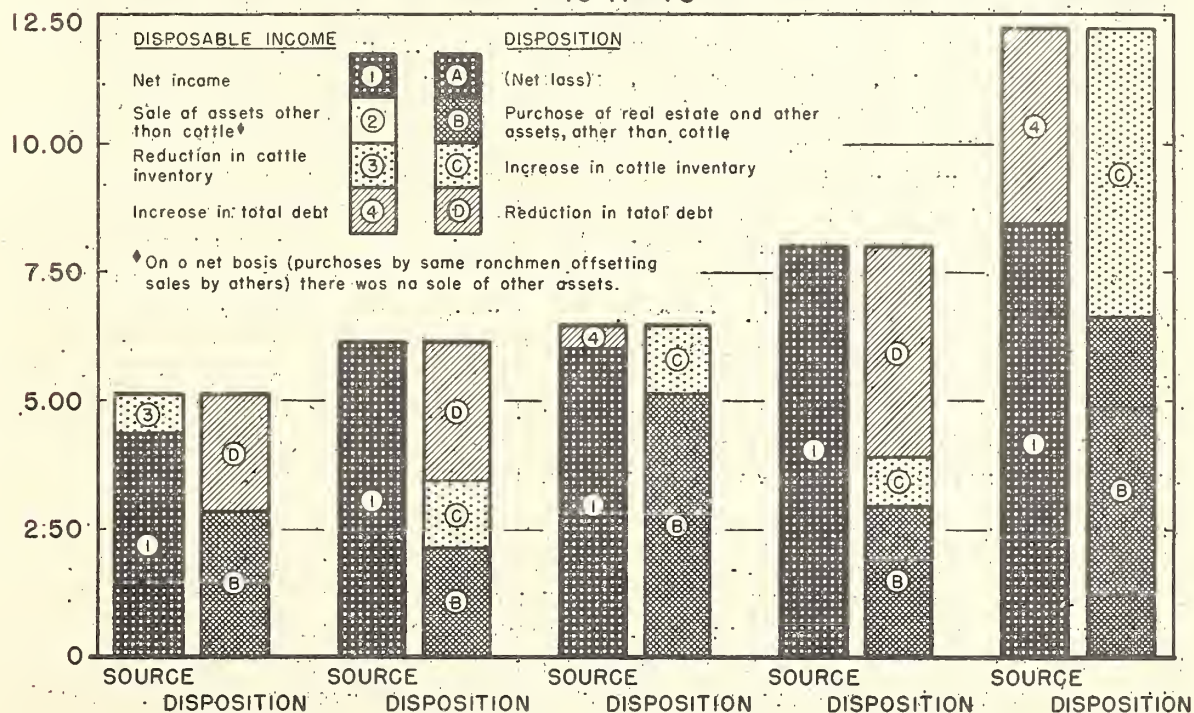
1935-37



1938-40



1941-43



operations during 1941-43, ranchmen in some sections were no doubt gambling against a normal recurrence of dry years and in this gamble apparently they won, particularly in the Plains, Montana, area; nature continued to provide feed during 1943 and 1944, abundant in some areas, sufficient in most others, while the Nation's unprecedented demand for food has extended the period of above-average beef-cattle prices. A question of greater importance than an appraisal of actions taken in recent high income years deals with changes that individual operators should make in the future in their allocation of disposable ranch income.

The data also indicate considerable attention to debt reduction in some areas, notably the Mountain area of Montana. When net debt reduction is shown in area averages, which naturally have been lowered by the effect of debt increases by some operators, it is evident that a number of ranchmen in the area must have made substantial progress in improving their financial position. It is to be remembered also in this connection that for the most part those ranches retiring their livestock indebtedness in full in a given year were automatically excluded from the averages in this study for that year. That the number dropped from the analysis for this and other reasons was considerable during 1941-43 may be seen from table 40, page 46.

Uses of This Report

Institutions financing range livestock producers may find a number of uses for the area and group averages and other data presented in this report. Although certain trends in the cattle industry may be generally known and observed, definite numerical trend information based on a considerable number of actual loan history records over a period of years is often not available. In this study, trend information is supplied regarding calf crop, cattle losses, ranch income, operating expense, financial position and financial progress of ranchers, and use of net income for debt reduction and other purposes. In analyzing individual loans, a comparison with the area and group averages of production, income, and expense can be used to determine why certain ranches fail to make financial progress while others in the area are making progress. The points of strength and weakness of an individual ranch can be determined by comparing its production, income, and expense with the average record of ranches operating in the same area. When points of weakness are known, the year-to-year record of the operator can be watched to see whether his trend is toward improvement or deterioration in those particular factors, or whether he is making progress toward offsetting the unfavorable factors by an increasingly favorable record in other respects.

Area and group averages may serve also as guides in projecting the operations of an individual ranch. When so used to estimate future income, expense, and debt-paying capacity of a ranch unit, due allowance must, of course, be made for variations from area averages in such individual ranch factors as favorable location with respect to summer range and winter feed supply, quality and weight of cattle marketed, and adaptability of the ranch facilities to the type of operation attempted. As has been

pointed out by a study of the wide range of variation from the averages, one ranch set-up or one area may be best adapted to produce high returns per head at relatively high expenses, while the best opportunity for profit of another unit or another area may be in relatively low returns per head produced at a minimum cash outlay for expenses.

Figures for 1937-43, developed in this study, cover a period of relatively favorable prices and range conditions, beginning at a time when many ranch operators had high debt balances accumulated during 6 years of low market prices for beef cattle, 1931-36, and at or near the close of periods of unfavorable range conditions as follows: 1929-37 in Oregon, when each of 9 successive years was at least somewhat below average; 1933-35 in Idaho, 3 successive below-average years; and 1934-37 in Montana, 4 years during which range conditions averaged 20 percent below the long-term average.

The data analyzed in this study, by areas, for periods of 5 to 7 years ending with 1943, indicate the rapid rate and high degree of financial recovery which cattle ranchmen may make during 4 or 5 favorable production and price years, following a period when financial loss was inevitable for many and lack of financial progress was reflected in accumulation of debt. If the next period of low cattle prices should again be ushered in by years of relatively unfavorable range conditions, data showing the ability of cattle ranch operators to recover financially and pay off accumulated debt should reassure lending institutions, as well as their stockholders and investors, in providing continuous and adequate credit service to the range cattle industry. These data should prove particularly useful during the next unfavorable period in the cattle production and price cycle as a guide for financing operators of proved ability in holding together their ranch unit and base herd pending the return of more favorable years for cattle ranching.

Summary Tables

The principal facts with respect to the annual area averages presented in the smaller topical tables throughout this report have been summarized for ready reference in tables 32 to 39 on the following pages.

Table 32 - Indebtedness, production, income, expense, and net financial progress of cattle ranches, by years, 1935-43:
Combined average of all ranches studied in Klamath, Wallowa, and Mountain, Montana, areas^a

Item	Unit or Base	1935	1936	1937	1938	1939	1940	1941	1942	1943	1935-39	1940-43
		rchs.	rchs.	rchs.	rchs.	rchs.	rchs.	rchs.	rchs.	rchs.		
Indebtedness at Beginning of Year												
Livestock loan	\$ per head inspected	17.02	15.07	16.69	16.73	18.72	19.00	20.88	17.80	16.34	16.85	18.28
Total liabilities	\$ per head inspected	37.17	35.18	37.15	37.68	39.51	36.72	37.00	34.04	31.88	37.34	34.91
Production												
Cattle at inspection	Average number per ranch	692	667	651	542	553	584	702	570	597	621	613
Cows and heifers, 2's	% number cattle inspected	46	44	46	46	47	45	48	48	49	46	48
Calf crop	% number cows and heifers, 2's	62	69	68	70	77	81	76	78	77	69	78
Apparent cattle loss	% number inspected	3	4	3	3	2	2	3	4	3	3	3
Net cattle production	% number inspected	25	26	28	29	34	34	33	34	34	28	34
Sales price, all cattle sold	\$ per head sold	49.05	44.28	59.53	54.07	61.19	61.35	74.27	76.35	93.17	53.62	76.28
Income, Expense, and Net Gain												
Net cattle sales proceeds ^b	\$ per head inspected	12.56	12.63	17.41	15.78	18.25	20.08	24.36	26.19	29.92	15.33	25.14
Other income	\$ per head inspected	.21	.08	.18	.36	.33	.29	.51	1.06	1.14	.23	.75
Operating expense ^c	\$ per head inspected	10.97	12.92	14.67	14.63	15.50	15.35	18.04	21.13	24.09	13.74	19.65
Net financial progress	\$ per head inspected	1.80	-.21	2.92	1.51	3.08	5.02	6.83	6.12	6.97	1.82	6.24

Table 33 - Indebtedness, production, income, expense, and net financial progress of cattle ranches, by years, 1935-43:
Combined average of all ranches studied in Central Oregon, Southern Idaho, and Plains, Montana, areas^a

Item	Unit or Base	1935	1936	1937	1938	1939	1940	1941	1942	1943	1935-39	1940-43
		rchs.	rchs.	rchs.	rchs.	rchs.	rchs.	rchs.	rchs.	rchs.		
Indebtedness at Beginning of Year												
Livestock loan	\$ per head inspected	16.08	14.44	14.87	14.86	16.32	15.23	17.05	18.84	13.89	15.31	16.25
Total liabilities	\$ per head inspected	36.90	34.51	35.52	33.54	36.45	36.28	36.75	35.79	30.21	35.38	34.76
Production												
Cattle at inspection	Average number per ranch	400	400	420	425	417	434	491	468	472	412	466
Cows and heifers, 2's	% number cattle inspected	44	46	45	46	49	51	51	49	48	46	50
Calf crop	% number cows and heifers, 2's	65	72	63	74	77	75	81	78	77	70	78
Apparent cattle loss	% number inspected	5	5	4	4	4	3	3	4	5	4	4
Net cattle production	% number inspected	24	28	25	30	34	35	39	35	33	28	36
Sales price, all cattle sold	\$ per head sold	46.95	44.03	50.36	46.09	47.76	51.58	59.88	69.75	75.54	47.04	64.19
Income, Expense, and Net Gain												
Net cattle sales proceeds ^b	\$ per head inspected	11.58	11.91	13.43	14.00	16.07	17.20	20.96	24.13	23.71	13.40	21.50
Other income	\$ per head inspected	.11	.20	.43	.15	.24	.14	.69	.89	.79	.23	.63
Operating expense ^d	\$ per head inspected	9.11	11.36	11.35	11.08	12.95	13.85	15.52	16.56	18.43	11.17	16.09
Net financial progress	\$ per head inspected	2.58	.75	2.51	3.07	3.36	3.49	6.13	8.46	6.07	2.45	6.04

^aYearly averages weighted according to number of cattle represented on the ranches studied in each area in the respective year.

^bSales proceeds adjusted for inventory change and cost of cattle purchased.

^cSee table 19 for operating expense itemized as to purpose.

^dSee table 20 for operating expense itemized as to purpose.

Table 34 - Liabilities, production, income, expense, and net financial progress of cattle ranches, Klamath area, by years, 1935-43

Item	Unit	1935	1936	1937	1938	1939	1940	1941	1942	1943
Liabilities at Beginning of Year										
Livestock loan	\$ per head inspected	17.06	13.96	16.15	19.02	19.41	20.64	24.39	20.20	25.17
Real estate mortgages	\$ per head inspected	14.45	16.77	15.67	14.80	14.77	13.21	10.45	10.26	11.44
Other	\$ per head inspected	1.32	1.54	.90	.96	1.16	.61	.50	1.07	2.58
Total liabilities	\$ per head inspected	32.83	32.27	32.72	34.78	35.34	34.46	35.34	31.53	39.19
Production										
Cattle at inspection	Average number per ranch	1,224	1,048	1,123	677	653	659	671	638	705
Cows and heifers, 2's	% number cattle inspected	46	46	48	51	50	52	47	43	41
Calf crop - fall count	% number cows and heifers, 2's	49	64	56	58	62	71	61	73	67
Apparent loss	% number inspected	3	3	2	3	2	2	3	3	4
Net production	% number inspected	21	26	25	26	29	34	26	29	24
Sales price, cattle sold	\$ per head sold	48.89	61.71	58.32	51.57	57.94	64.59	90.44	87.52	96.84
Income										
Sales proceeds - cattle	\$ per head inspected	17.17	16.05	15.43	15.75	17.24	17.15	25.60	24.99	30.27
Inventory change ^a	\$ per head inspected	-5.35	2.84	1.57	-1.59	.63	1.20	-2.83	-2.03	.68
Less cost of cattle purchased	\$ per head inspected	-	1.53	-	.16	.69	1.31	1.34	2.77	4.09
Net proceeds from cattle	\$ per head inspected	11.82	17.36	17.00	14.00	17.18	17.04	21.43	22.19	26.86
Other income	\$ per head inspected	.05	-	-	.10	.29	.28	.62	1.76	1.94
Total income	\$ per head inspected	11.87	17.36	17.00	14.10	17.47	17.32	22.05	23.95	28.80
Operating Expense										
Taxes	\$ per head inspected	.94	1.26	1.16	1.13	1.19	1.38	1.50	3.78	2.63
Range (leases, permits, etc.)	\$ per head inspected	1.26	2.20	1.96	1.99	2.58	2.30	2.92	2.87	5.51
Feed (cash outlay)	\$ per head inspected	3.18	2.35	1.75	1.40	1.42	1.09	1.02	1.03	.50
Family (including life insurance)	\$ per head inspected	.54	1.07	1.05	1.15	.98	.66	1.19	.70	.70
Labor (hired)	\$ per head inspected	2.25	3.28	3.31	3.39	3.90	4.12	4.65	5.26	5.97
Provisions and supplies	\$ per head inspected	.80	1.01	.97	1.04	.93	1.15	1.05	1.30	1.53
Transportation (auto, truck, etc.)	\$ per head inspected	.45	.43	.56	.58	.61	.66	.59	.61	.81
Equipment and repairs (cash outlay)	\$ per head inspected	.05	.61	1.28	.30	.15	.55	1.92	1.23	1.05
Replacements (bulls purchased)	\$ per head inspected	.39	.51	.41	.53	.42	1.22	.79	1.39	.95
Other operating expense	\$ per head inspected	9.84	12.72	12.49	11.63	13.49	14.73	17.05	19.45	20.77
Total excluding interest	\$ per head inspected	1.70	2.00	1.97	2.07	1.68	1.65	1.48	1.21	1.69
Interest paid	\$ per head inspected	11.54	14.72	14.46	13.70	15.17	16.38	18.53	20.66	22.46
Total expense	\$ per head inspected									
Financial Progress										
Net financial progress	\$ per head inspected	.33	2.64	2.54	.40	2.30	.94	3.52	3.29	6.34
Change in total liabilities	\$ per head inspected	-5.20	2.78	.93	-.72	-.52	1.42	-5.03	3.30	-5.07
Change in livestock inventory	\$ per head inspected	-5.35	2.84	1.57	-1.59	.63	1.20	-2.83	-2.03	.68
Change in other assets	\$ per head inspected	.48	2.58	1.90	1.27	1.15	1.16	1.32	6.62	.59

^aOn basis of fixed values per head for each class and age group of cattle.

^bOn basis of fixed per head inventory values and cash outlay for expenses with no allowance for return on equity or compensation for management other than family living expense including life insurance.

Table 35 - Liabilities, production, income, expense, and net financial progress of cattle ranches, Central Oregon,
by years, 1935-43

Item	Unit	1935	1936	1937	1938	1939	1940	1941	1942	1943
		12 ranches	12 ranches	12 ranches	26 ranches	22 ranches	22 ranches	20 ranches	22 ranches	22 ranches
<u>Liabilities at Beginning of Year</u>										
Livestock loan	\$ per head inspected	17.28	13.86	13.41	15.54	17.14	16.02	18.45	18.06	12.56
Real estate mortgage	\$ per head inspected	16.11	16.26	17.18	14.03	13.88	17.73	20.08	17.87	15.13
Other	\$ per head inspected	2.16	1.71	2.27	3.57	3.76	2.73	2.56	1.29	1.28
Total liabilities	\$ per head inspected	35.55	31.83	32.86	33.14	34.78	36.48	41.09	37.22	28.97
<u>Production</u>										
Cattle at inspection	Average number per ranch	547	546	575	524	445	432	459	484	484
Cows and heifers, 2's	% number cattle inspected	42	45	45	45	48	50	51	49	49
Calif crop - fall count	% number cows and heifers, 2's	66	66	63	75	77	72	79	78	75
Apparent loss	% number inspected	3	4	3	4	4	3	3	5	5
Net production	% number inspected	24	26	25	30	33	33	37	34	31
Sales price, cattle sold	\$ per head sold	47.71	49.46	52.49	45.79	46.76	52.34	59.61	68.78	76.66
<u>Income</u>										
Sales proceeds - cattle	\$ per head inspected	12.39	11.28	12.15	15.50	17.28	14.86	17.62	24.81	24.62
Inventory change ^a	\$ per head inspected	.27	1.42	1.78	.96	-1.21	1.88	2.07	.85	1.13
Less cost of cattle purchased	\$ per head inspected	.38	.57	.40	2.20	.37	.52	.27	1.35	1.57
Net proceeds from cattle	\$ per head inspected	12.28	12.13	13.53	14.26	15.70	16.22	19.42	24.31	24.18
Other income	\$ per head inspected	.02	.13	.43	.07	.07	.10	.64	.99	.62
Total income	\$ per head inspected	12.30	12.26	13.96	14.33	15.77	16.32	20.26	25.30	24.80
<u>Operating Expense</u>										
Taxes	\$ per head inspected	.56	1.05	.94	.98	1.00	1.20	1.50	2.64	3.02
Range (leases, permits, etc.)	\$ per head inspected	.59	.84	.98	.93	.96	1.05	.93	.82	1.02
Feed (cash outlay)	\$ per head inspected	1.27	1.84	1.40	1.36	1.27	1.79	.52	.51	1.23
Family (including life insurance)	\$ per head inspected	.56	.56	.61	.84	1.12	1.11	1.20	1.12	1.45
Labor (hired)	\$ per head inspected	1.37	1.66	2.23	2.33	2.91	3.04	3.47	4.18	4.60
Provisions and supplies	\$ per head inspected	1.06	1.03	1.24	1.37	1.40	1.53	1.69	1.86	1.82
Transportation (auto, truck, etc.)	\$ per head inspected	.40	.41	.46	.49	.49	.91	.56	.70	.73
Equipment and repairs (cash outlay)	\$ per head inspected	.08	.02	.07	.16	.36	.83	1.32	1.55	.81
Replacements (bulls purchased)	\$ per head inspected	.24	.31	.52	.38	.43	.78	.44	.73	1.87
Other operating expense	\$ per head inspected	.28	.57	.36	.58	1.11	.86	1.37	1.14	1.31
Total excluding interest	\$ per head inspected	6.41	8.29	8.81	9.42	11.05	12.10	13.00	15.25	17.86
Interest paid	\$ per head inspected	1.77	2.02	1.78	1.69	1.65	2.08	2.10	2.02	1.78
Total expense	\$ per head inspected	8.18	10.31	10.59	11.11	12.70	14.18	15.10	17.27	19.64
<u>Financial Progress</u>										
Net financial progress ^b	\$ per head inspected	4.12	1.95	3.37	3.22	3.07	2.14	5.16	8.03	5.16
Change in total liabilities	\$ per head inspected	-3.80	2.77	.18	-1.06	.57	4.04	-1.50	-5.56	-8.89
Change in livestock inventory	\$ per head inspected	.27	1.42	1.78	.96	-1.21	1.88	2.07	.85	1.13
Change in other assets	\$ per head inspected	.05	3.30	1.77	1.20	4.85	4.30	1.59	1.62	3.14

^aOn basis of fixed values per head for each class and age group of cattle.

^bOn basis of fixed per head inventory values and cash outlay for expenses with no allowance for return on equity or compensation for management other than family living expense including life insurance.

United States Department of Agriculture, Farm Credit Administration, Economic and Credit Research Division

Table 36 - Liabilities, production, income, expense, and net financial progress of cattle ranches, Wallowa area, by years, 1935-43

Item	Unit	Year								
		1935	1936	1937	1938	1939	1940	1941	1942	1943
		10 ranches	10 ranches	10 ranches	14 ranches	12 ranches	16 ranches	10 ranches	11 ranches	9 ranches
Liabilities at Beginning of Year										
Livestock loan	\$ per head inspected	20.22	17.98	19.00	16.24	16.27	17.73	20.37	17.59	18.88
Real estate mortgage	\$ per head inspected	20.14	20.43	21.12	26.29	24.98	24.91	26.65	26.95	23.28
Other	\$ per head inspected	3.16	3.13	2.82	3.21	2.62	1.81	.89	.46	.77
Total liabilities	\$ per head inspected	43.52	41.54	42.94	45.74	43.87	44.45	47.91	45.00	42.93
Production										
Cattle at inspection	Average number per ranch	511	507	508	414	448	455	344	417	526
Cows and heifers, 2's	% number cattle inspected	43	38	36	42	38	39	47	48	41
Calf crop - fall count	% number cows and heifers, 2's	64	70	73	78	87	85	76	75	76
Apparent loss	% number inspected	3	5	2	3	2	2	3	3	3
Net production	% number inspected	25	22	25	30	31	31	33	33	28
Sales price, cattle sold	\$ per head sold	47.83	52.08	68.34	60.55	62.47	66.06	74.84	78.70	91.28
Income										
Sales proceeds - cattle	\$ per head inspected	14.61	14.45	24.56	18.43	21.61	24.78	29.02	38.33	40.13
Inventory change ^a	\$ per head inspected	-1.17	-1.07	-1.13	-2.29	2.46	2.44	-1.11	6.02	-1.94
Less cost of cattle purchased	\$ per head inspected	1.35	1.62	3.59	2.03	5.21	3.17	4.85	18.50	11.33
Net proceeds from cattle	\$ per head inspected	12.09	11.76	20.04	16.11	18.86	24.05	24.06	25.85	26.86
Other income	\$ per head inspected	.22	.14	.64	.47	.68	.51	1.15	.74	.69
Total income	\$ per head inspected	12.31	11.90	20.68	16.58	19.54	24.56	25.21	26.59	27.55
Operating Expense										
Taxes	\$ per head inspected	.86	.96	1.04	1.82	1.57	1.50	2.37	2.69	2.93
Range (leases, permits, etc.)	\$ per head inspected	1.19	1.63	1.49	1.78	2.17	2.06	1.94	1.90	1.63
Feed (cash outlay)	\$ per head inspected	1.36	2.03	2.16	.55	.46	.49	.68	1.37	2.35
Family (including life insurance)	\$ per head inspected	1.09	1.47	1.84	1.50	1.88	1.61	1.93	1.90	1.85
Labor (hired)	\$ per head inspected	1.74	2.27	2.53	3.10	3.17	3.08	3.12	3.73	4.98
Provisions and supplies	\$ per head inspected	1.43	1.42	1.55	1.98	1.93	1.81	1.99	1.90	1.95
Transportation (auto, truck, etc.)	\$ per head inspected	.42	.42	.73	1.15	.84	.61	.79	.88	.88
Equipment and repairs (cash outlay)	\$ per head inspected	.18	.07	.56	.44	.43	.86	.61	.46	1.00
Replacements (bulls purchased)	\$ per head inspected	.41	.36	.65	.75	.73	1.04	1.02	.51	.86
Other operating expense	\$ per head inspected	.21	.36	2.10	.63	1.80	1.59	2.29	2.13	1.43
Total excluding interest	\$ per head inspected	8.89	10.99	14.65	13.70	14.98	14.58	16.79	17.38	19.86
Interest paid	\$ per head inspected	1.83	2.36	2.60	2.82	2.70	2.56	2.11	2.99	2.16
Total expense	\$ per head inspected	10.72	13.35	17.25	16.52	17.68	17.14	18.90	20.37	22.02
Financial Progress										
Net financial progress ^b	\$ per head inspected	1.59	-1.45	3.43	.06	1.86	7.42	6.31	6.22	5.53
Change in total liabilities	\$ per head inspected	-2.28	1.45	.34	-22	2.63	-22	-3.80	7.75	-2.57
Change in livestock inventory	\$ per head inspected	-1.17	-1.07	-1.13	-29	2.46	2.44	-1.11	6.02	-1.94
Change in other assets	\$ per head inspected	.50	1.07	4.90	.13	2.23	4.76	2.62	7.95	4.90

^aOn basis of fixed values per head for each class and age group of cattle.

^bOn basis of fixed per head inventory values and cash outlay for expenses with no allowance for return on equity or compensation for management other than family living expense including life insurance.

Table 37 - Liabilities, production, income, expense, and net financial progress of cattle ranches, Southern Idaho, by years, 1935-43

Item	Unit	1935	1936	1937	1938	1939	1940	1941	1942	1943
		11 ranches	11 ranches	11 ranches	13 ranches	5 ranches	5 ranches	4 ranches	3 ranches	5 ranches
Liabilities at Beginning of Year										
Livestock loan	\$ per head inspected	15.15	13.94	15.94	14.88	14.10	12.81	12.42	19.87	11.65
Real estate mortgage	\$ per head inspected	11.79	12.65	11.44	13.31	19.48	17.83	14.87	16.71	14.12
Other	\$ per head inspected	4.49	4.12	3.95	3.17	1.16	3.46	3.72	.20	.44
Total liabilities	\$ per head inspected	31.43	30.71	31.33	31.36	34.74	31.46	28.01	36.78	26.21
Production										
Cattle at inspection	Average number per ranch	302	287	311	364	569	597	703	853	692
Cows and heifers, 2's	% number cattle inspected	44	45	46	45	46	48	50	55	48
Calf crop - fall count	% number cows and heifers, 2's	61	77	64	67	80	75	84	71	75
Apparent loss	% number inspected	5	7	5	5	3	3	3	2	2
Net production	% number inspected	21	27	25	25	34	33	39	37	32
Sales price, cattle sold	\$ per head sold	48.77	49.85	52.84	47.29	50.19	51.14	65.04	70.23	74.51
Income										
Sales proceeds - cattle	\$ per head inspected	13.14	10.74	14.05	16.64	15.52	17.40	23.00	26.06	23.11
Inventory change ^a	\$ per head inspected	-2.28	2.30	-.62	-3.69	1.83	.16	1.79	-1.25	1.60
Less cost of cattle purchased	\$ per head inspected	-	.54	-	.56	.61	.32	1.32	-	-
Net proceeds from cattle	\$ per head inspected	10.86	12.50	13.43	12.39	16.74	17.24	23.47	24.81	24.71
Other income	\$ per head inspected	.10	.15	-	.12	.54	.12	.62	-	.06
Total income	\$ per head inspected	10.96	12.65	13.43	12.51	17.28	17.36	24.09	24.81	24.77
Operating Expense										
Taxes	\$ per head inspected	.62	.91	1.12	1.01	1.07	.85	1.46	1.53	3.03
Range (leases, permits, etc.)	\$ per head inspected	.39	.65	.57	.69	.82	.98	1.65	1.04	1.34
Feed (cash outlay)	\$ per head inspected	2.89	2.94	2.58	1.20	1.47	1.50	3.06	3.51	2.34
Family (including life insurance)	\$ per head inspected	.87	1.40	1.26	1.01	1.64	1.54	1.64	1.88	1.79
Labor (hired)	\$ per head inspected	1.06	1.99	2.13	2.12	2.89	2.56	2.85	3.81	4.05
Provisions and supplies	\$ per head inspected	1.02	1.68	1.54	1.11	1.61	1.33	1.12	1.43	1.14
Transportation (auto, truck, etc.)	\$ per head inspected	.17	.49	.42	.35	.70	.82	.78	.72	.55
Equipment and repairs (cash outlay)	\$ per head inspected	.03	.18	.58	.29	.47	1.06	1.49	1.31	.22
Replacements (bulls purchased)	\$ per head inspected	.79	.31	.12	.28	.58	2.06	1.07	.27	.20
Other operating expense	\$ per head inspected	.38	.23	.13	.32	.57	.90	.58	.66	.29
Total excluding interest	\$ per head inspected	8.22	10.80	10.45	8.38	11.82	13.60	15.70	16.16	14.95
Interest paid	\$ per head inspected	1.82	1.98	1.92	1.70	1.79	1.41	1.65	1.76	1.67
Total expense	\$ per head inspected	10.04	12.78	12.37	10.08	13.61	15.01	17.35	17.92	16.62
Financial Progress										
Net financial progress ^b	\$ per head inspected	.92	-.13	1.06	2.43	3.67	2.35	6.74	6.89	8.15
Change in total liabilities	\$ per head inspected	-2.31	3.30	-1.01	-5.32	-1.76	-1.16	4.70	-7.38	-3.16
Change in livestock inventory	\$ per head inspected	-2.28	2.30	-.62	-3.69	1.83	1.16	1.79	-1.25	1.60
Change in other assets	\$ per head inspected	.89	.87	.67	.80	.08	1.03	9.65	.76	3.39

^aOn basis of fixed values per head for each class and age group of cattle.

^bOn basis of fixed per head inventory values and cash outlay for expenses with no allowance for return on equity or compensation for management other than family living expense including life insurance.

United States Department of Agriculture, Farm Credit Administration, Economic & Credit Research Division

Table 38 - Liabilities, production, income, expense, and net financial progress of cattle ranches, Mountain area of Montana, by years, 1935-43

Item.	Unit	1935	1936	1937	1938	1939	1940	1941	1942	1943
		21 ranches	21 ranches	21 ranches	24 ranches	14 ranches	13 ranches	11 ranches	25 ranches	31 ranches
Liabilities at Beginning of Year										
Livestock loan	\$ per head inspected	15.75	14.49	16.04	15.42	19.67	15.62	18.81	16.75	13.32
Real estate mortgage	\$ per head inspected	18.34	18.11	19.92	19.23	19.04	14.63	15.38	14.50	12.61
Other	\$ per head inspected	3.03	1.53	1.22	1.40	2.34	2.23	.63	.63	1.14
Total liabilities	\$ per head inspected	37.12	34.13	37.18	36.05	41.05	32.48	34.82	31.88	27.07
Production										
Cattle at inspection	Average number per ranch	627	633	585	544	550	666	1,059	607	592
Cows and heifers, 2's	% number cattle inspected	45	45	48	44	50	42	48	50	53
Calf crop - fall count	% number cows and heifers, 2's	70	72	72	76	87	91	85	81	79
Apparent loss	% number inspected	4	4	4	3	2	2	3	4	3
Net production	% number inspected	28	28	31	31	41	36	37	37	39
Sales price, cattle sold	\$ per head sold	49.68	36.43	55.80	52.93	63.83	54.29	68.13	71.92	92.90
Income										
Sales proceeds - cattle	\$ per head inspected	13.73	13.77	16.93	16.74	18.16	17.94	32.94	29.56	32.05
Inventory change ^a	\$ per head inspected	-51	-2.58	.31	1.28	1.82	3.15	-.04	1.52	1.36
Less cost of cattle purchased	\$ per head inspected	.07	.47	.70	1.19	.97	1.34	6.59	2.93	1.89
Net proceeds from cattle	\$ per head inspected	13.15	10.72	16.54	16.83	19.01	19.75	26.31	28.15	31.52
Other income	\$ per head inspected	.31	.10	.09	.48	.15	.13	.25	.83	1.04
Total income	\$ per head inspected	13.46	10.82	16.63	17.31	19.16	19.88	28.56	28.98	32.56
Operating Expense										
Taxes	\$ per head inspected	1.00	1.03	1.33	1.15	1.35	1.25	1.61	3.54	3.96
Range (leases, permits, etc.)	\$ per head inspected	.90	.99	1.42	1.34	1.79	1.56	2.40	2.42	2.63
Feed (cash outlay)	\$ per head inspected	1.69	2.40	1.77	1.66	.77	.56	.96	.83	.91
Family (including life insurance)	\$ per head inspected	.59	.68	.93	1.10	.96	.95	2.37	1.27	1.23
Labor (hired)	\$ per head inspected	2.14	2.27	2.94	3.12	3.23	2.81	4.18	5.40	7.80
Provisions and supplies	\$ per head inspected	1.25	1.26	1.55	1.65	1.53	1.33	1.65	1.97	2.15
Transportation (auto, truck, etc.)	\$ per head inspected	.32	.39	.63	.73	.64	.66	.64	.72	.85
Equipment and repairs (cash outlay)	\$ per head inspected	.17	.24	.42	.33	.56	.48	1.05	1.06	1.36
Replacements (bulls purchased)	\$ per head inspected	.64	.67	.48	.45	.95	.89	.77	1.75	1.76
Other operating expense	\$ per head inspected	.41	.28	.36	.84	.54	.85	.30	.74	1.05
Total excluding interest	\$ per head inspected	9.11	10.21	11.83	12.37	12.52	11.34	15.93	19.60	23.70
Interest paid	\$ per head inspected	1.64	1.70	1.88	2.05	2.04	1.49	1.53	1.99	1.36
Total expense	\$ per head inspected.	10.75	11.91	13.71	14.42	14.56	12.83	17.46	21.59	25.06
Financial Progress										
Net financial progress ^b	\$ per head inspected	2.71	-1.09	2.92	2.89	4.60	7.05	9.10	7.39	7.50
Change in total liabilities	\$ per head inspected	-2.65	.21	-2.36	-.56	-2.54	-1.84	-7.01	-1.63	-3.66
Change in livestock inventory	\$ per head inspected	-.51	-2.58	.31	1.28	1.82	3.15	-.04	1.52	1.36
Change in other assets	\$ per head inspected	.57	1.70	.25	1.05	.44	2.06	2.13	4.24	2.48

^aOn basis of fixed values per head for each class and age group of cattle.

^bOn basis of fixed per head inventory values and cash outlay for expenses with no allowance for return on equity or compensation for management other than family living expense including life insurance.

Table 39 - Liabilities, production, income, expense, and net financial progress of cattle ranches, Plains area of Montana, by years, 1935-43

Item	Unit	1935 6 ranches	1936 6 ranches	1937 6 ranches	1938 10 ranches	1939 10 ranches	1940 8 ranches	1941 7 ranches	1942 13 ranches	1943 12 ranches
Liabilities at Beginning of Year										
Livestock loan		13.31	17.25	18.27	16.63	15.69	15.13	12.45	20.06	19.01
Real estate mortgage		31.34	27.90	28.53	27.95	24.33	20.88	13.67	10.61	16.91
Other		8.09	4.87	6.21	5.59	4.08	4.86	1.88	1.23	5.59
Total liabilities		52.74	50.02	53.01	50.17	44.10	40.87	28.00	31.90	36.51
Production										
Cattle at inspection	Average number per ranch	285	317	311	247	278	339	464	351	357
Cows and heifers, 2's	% number cattle inspected	54	52	46	53	56	56	54	46	48
Calf crop - fall count	% number cows and heifers, 2's	69	82	64	82	77	87	87	83	86
Apparent loss	% number inspected	7	5	5	3	4	2	4	4	5
Net production	% number inspected	30	37	25	40	40	47	43	35	36
Sales price, cattle sold	\$ per head sold	39.85	27.69	39.46	45.21	49.19	49.90	56.36	72.24	73.26
Income										
Sales proceeds - cattle		9.61	10.76	10.96	12.74	18.32	17.59	21.64	20.70	20.38
Inventory change ^a	\$ per head inspected	2.18	- .58	2.53	3.03	4.63	3.03	11.24	3.26	2.22
Less cost of cattle purchased	\$ per head inspected	1.52	-	4.44	.08	6.27	-	9.75	.62	.88
Net proceeds from cattle	\$ per head inspected	10.27	10.18	13.05	15.69	16.68	20.62	23.13	23.34	21.72
Other income	\$ per head inspected	.55	.49	1.25	.64	.54	.28	.30	1.15	1.82
Total income	\$ per head inspected	10.82	10.67	14.30	16.33	17.22	20.90	23.43	24.49	23.54
Operating Expense										
Taxes	\$ per head inspected	1.27	1.77	1.21	1.96	2.17	1.46	1.48	1.99	2.82
Range (leases, permits, etc.)	\$ per head inspected	.71	.79	.99	.75	.87	1.20	1.64	1.33	1.09
Feed (cash outlay)	\$ per head inspected	1.46	3.16	1.03	.83	.55	.41	.45	.37	1.43
Family (including life insurance)	\$ per head inspected	.96	.82	.86	1.14	1.64	1.01	.72	.51	.46
Labor (hired)	\$ per head inspected	1.47	1.03	1.55	2.44	2.07	2.22	2.70	3.02	3.39
Provisions and supplies	\$ per head inspected	2.05	1.95	2.51	2.13	1.75	1.72	2.12	1.78	1.49
Transportation (auto, truck, etc.)	\$ per head inspected	.42	.26	.65	.79	.66	.46	.82	.48	.69
Equipment and repairs (cash outlay)	\$ per head inspected	.28	.30	.23	.41	.51	1.17	1.20	1.59	1.41
Replacements (bulls purchased)	\$ per head inspected	-	.53	.24	.47	.61	.30	1.80	1.10	1.04
Other operating expense	\$ per head inspected	.37	.29	.81	.03	.53	.08	.64	.39	.80
Total excluding interest	\$ per head inspected	8.99	10.90	10.08	10.95	11.36	10.03	13.57	12.56	14.62
Interest paid	\$ per head inspected	1.90	1.70	2.24	1.85	1.79	1.39	1.53	1.61	2.26
Total expense	\$ per head inspected	10.89	12.60	12.32	12.80	13.15	11.42	15.10	14.17	16.88
Financial Progress										
Net financial progress ^b	\$ per head inspected	-.07	-1.93	1.98	3.53	4.07	9.48	8.33	10.32	6.66
Change in total liabilities	\$ per head inspected	2.97	2.04	.64	-.48	2.13	-5.98	-11.52	3.04	-3.17
Change in livestock inventory	\$ per head inspected	2.18	-.58	2.53	3.03	4.63	3.03	11.24	3.26	2.22
Change in other assets	\$ per head inspected	.72	.69	.09	.02	1.57	.47	8.61	10.10	1.27

^aOn basis of fixed values per head for each class and age group of cattle.

^bOn basis of fixed per head inventory values and cash outlay for expenses with no allowance for return on equity or compensation for management other than family living expense including life insurance.

United States Department of Agriculture, Farm Credit Administration, Economic and Credit Research Division

APPENDIX

Continuity of Ranch Records Included in Averages

Tables throughout this study giving annual area averages of all ranches studied were based on the number of ranches indicated in table 2 by areas and by years. Numbers in table 2, however, do not show how many of the ranches reported in 1 year were included in the averages of succeeding years, or to what extent entirely different ranches were analyzed from year to year. Therefore table 40 has been included at this point to supply at least a general survey of the extent to which groups of identical ranches were represented continuously through the years. This table indicates, for example, that 66 ranches had continuous records for 4 years, 1935-38. Of these 66 ranches studied each year, 1935 through 1938, 25 ranches dropped out in 1939, 3 others dropped out in 1940, 17 in 1941, 6 in 1942, and 2 in 1943, while the history of 13 of the original group continued in the averages through 1943.

Year-to-Year All-Ranch Averages as Trend Indicators

Since the identity of ranches in the area averages throughout this report changed to some extent from year to year, the question may be raised whether the indicated year-to-year changes in production, income, and expense factors may not be due largely to changes in the identity of the ranches analyzed. For example, the steep yearly rise in total operating expense in the Mountain area of Montana, 1940-43: does it reflect actually rising costs or was the rise in the average due largely to the dropping out of lower cost ranch units from the sample and the continual addition of new ranches consistently operating at higher cash outlay for expense due to less advantageous location, less efficient size of operation, or less efficient management? Similar questions might be asked respecting trends in production factors, sales proceeds, ranch income, and certain expense items as shown in yearly area averages in many of the tables. A partial answer to such questions has been provided in tables 42 to 45, in which year-to-year changes in all production, income, and expense factors are shown for certain groups of ranches remaining identical for 2 or 3 successive years. To illustrate comparisons which may be made between data in these tables and all-ranch tables on pages 39 to 44, table 41 has been arranged, consisting of data on selected items of production, income, and expense for the Mountain area of Montana, abstracted from table 38, page 43 and from table 45, page 51. Referring to the item of total operating expense, table 41, it may be noted that the all-ranch average for the years 1938, 1939, and 1940 respectively, was \$14.42, \$14.36, and \$12.83. On a group of 13 ranches identical through the 3 years the corresponding yearly averages were \$14.98, \$14.27, and \$12.83. Similarly 1940-41 operating expense, all-ranch averages, was \$12.83 and \$17.46, while a group of 5 ranches, identical for the 2 years, averaged \$14.31 and \$16.54. Again 1941-42 all-ranch operating expense was \$17.46 and \$21.59 while in the same years 9 identical ranches averaged \$17.66 and \$21.66. Finally, in 1942-43, the all-ranch group recorded a rise from \$21.59 to \$25.06 while 20 identical ranches registered a rise from \$21.33 to \$25.07. Similar rather close correspondence

in year-to-year changes, both in direction and in amount, may be observed in the other factors selected for table 41.

Table 40 - Continuity of loan history records: Number of ranches included in study by years, grouped according to time period of loan record

Ranch groups according to period of loan history	Years included in this study								
	1935	1936	1937	1938	1939	1940	1941	1942	1943
	<i>number of ranches</i>								
1935-38	25	25	25	25					
1935-39	3	3	3	3	3				
1935-40	17	17	17	17	17	17			
1935-41	6	6	6	6	6	6	6		
1935-42	2	2	2	2	2	2	2	2	
1935-43	13	13	13	13	13	13	13	13	13
1938-40				15	15	15			
1938-41				3	3	3	3		
1938-42				5	5	5	5	5	
1938-43				11	11	11	11	11	11
1939-41					1	1	1		
1940-41						1	1		
1940-42						1	1	1	
1940-43						2	2	2	2
1941 only							2		
1941-42							6	6	
1941-43							10	10	10
1942 only								4	
1942-43								31	31
1943 only									19
Yearly total: Number of ranches, all groups	66	66	66	100	76	77	63	85	86
Number of old ranches dropped from analysis	0	0	0	0	25	3	32	13	18
Number of new ranches added to analysis	0	0	0	34	1	4	18	35	19

Comparison of tables 42 with 34, 43 with 35, and 44 with 36, generally reveals rather close correspondence in the direction of change from year to year in all important production, income, and expense factors. Year-to-year changes in dollar amounts in the all-ranch averages and the corresponding record of selected groups of identical ranches also was generally as similar as could reasonably be expected between groups including some different ranches, although there were some exceptions in certain years in certain items. Altogether, it may be concluded that year-to-year changes in the all-ranch tables largely represent general

Table 41 - Mountain area, Montana: Trends in production, income, and expense; all-ranch averages compared with averages of groups of identical ranches having continuous 2-year or 3-year histories, 1938-43

Item	1938	1939	1940	1941	1942	1943
No. ranches represented in all-ranch averages	24	14	13	11	25	31
<u>Cows and heifers, 2's - pct. of herds:</u>						
				<i>percent</i>		
All-ranch average	44	50	42	48	50	53
13 identical ranches, 1938-40	46	50	42			
5 identical ranches, 1940-41			43	46		
9 identical ranches, 1941-42				48	49	
20 identical ranches, 1942-43					49	54
<u>Calf crop, pct. of cows and heifers, 2's:</u>						
All-ranch average	76	87	91	85	81	79
13 identical ranches, 1938-40	79	87	91			
5 identical ranches, 1940-41			88	84		
9 identical ranches, 1941-42				85	79	
20 identical ranches, 1942-43					82	80
<u>Sales price, cattle sold, per head:</u>				<i>dollars</i>		
All-ranch average	52.93	63.83	54.29	68.13	71.92	92.90
13 identical ranches, 1938-40	53.22	63.97	54.29			
5 identical ranches, 1940-41			54.03	69.78		
9 identical ranches, 1941-42				68.29	74.60	
20 identical ranches, 1942-43					71.88	93.95
<u>Total ranch income:</u>				<i>dollars per head inspected</i>		
All-ranch average	17.31	19.16	19.88	26.56	29.98	32.56
13 identical ranches, 1938-40	17.35	19.04	19.88			
5 identical ranches, 1940-41			20.53	22.24		
9 identical ranches, 1941-42				27.01	29.77	
20 identical ranches, 1942-43					28.44	33.20
<u>Total operating expense:</u>						
All-ranch average	14.42	14.36	12.83	17.46	21.59	25.06
13 identical ranches, 1938-40	14.98	14.27	12.83			
5 identical ranches, 1940-41			14.31	16.54		
9 identical ranches, 1941-42				17.68	21.66	
20 identical ranches, 1942-43					21.33	25.07
<u>Labor expense, cash outlay:</u>						
All-ranch average	3.12	3.23	2.81	4.18	5.40	7.80
13 identical ranches, 1938-40	3.24	3.24	2.81			
5 identical ranches, 1940-41			3.65	4.70		
9 identical ranches, 1941-42				4.27	5.37	
20 identical ranches, 1942-43					5.28	8.53

Table 42 - Klamath area - Groups of identical ranches: Annual production, income, expense, financial position, and progress; selected periods, 1938-43

Item	Unit	13 Ranches				9 Ranches			7 Ranches		
		1938	1939	1940	1940	1940	1941	1942	1942	1943	
Liabilities at Beginning of Year											
Livestock loan	\$ per head inspected	19.02	19.41	20.64	20.64	24.56	24.92	20.08	23.32	25.17	
Real estate mortgage	\$ per head inspected	14.80	14.77	13.21	13.21	13.32	11.54	10.71	12.14	11.44	
Other	\$ per head inspected	.96	1.16	.61	.61	.88	.52	1.02	1.29	2.58	
Total liabilities	\$ per head inspected	34.78	35.34	34.46	34.46	38.76	36.98	31.81	36.75	39.19	
Production											
Cattle at inspection	Average number per ranch	677	653	659	659	659	742	740	682	705	
Cows and heifers, 2's	% number cattle inspected	51	50	52	52	50	47	43	39	41	
Calf crop - fall count	% number cows and heifers, 2's	58	62	71	71	66	60	74	78	67	
Apparent loss	% number inspected	3	2	2	2	2	3	3	3	4	
Net production	% number inspected	26	29	34	34	31	26	29	28	24	
Sales price, cattle sold	\$ per head sold	51.57	57.94	64.59	64.59	68.68	90.99	88.91	87.89	96.84	
Income											
Sales proceeds - cattle	\$ per head inspected	15.75	17.24	17.15	17.15	15.32	26.39	25.45	27.87	30.27	
Inventory change ^a	\$ per head inspected	-1.59	.63	1.20	1.20	1.14	-2.77	-0.09	-7.75	.68	
Less cost of cattle purchased	\$ per head inspected	.16	.69	1.31	1.31	1.90	1.48	2.92	4.07	4.09	
Net proceeds from cattle	\$ per head inspected	14.00	17.18	17.04	17.04	14.56	22.14	22.44	23.05	26.86	
Other income	\$ per head inspected	.10	.29	.28	.28	.41	.68	1.86	1.89	1.94	
Total income	\$ per head inspected	14.10	17.47	17.32	17.32	14.97	22.82	24.30	24.94	28.80	
Operating Expense											
Taxes	\$ per head inspected	1.13	1.19	1.38	1.38	1.23	1.52	3.96	4.09	2.63	
Range (leases, permits, etc.)	\$ per head inspected	1.99	2.58	2.30	2.30	2.54	3.00	2.92	3.33	5.51	
Feed (cash outlay)	\$ per head inspected	1.40	1.42	1.09	1.09	1.10	1.08	1.04	1.52	.50	
Family (including life insurance)	\$ per head inspected	1.15	.98	.66	.66	.59	1.07	.74	.56	.70	
Labor (hired)	\$ per head inspected	3.39	3.90	4.12	4.12	4.42	4.79	5.37	5.96	5.97	
Provisions and supplies	\$ per head inspected	1.04	.93	1.15	1.15	1.09	1.01	1.21	1.34	1.53	
Transportation (auto, truck, etc.)	\$ per head inspected	.58	.61	.66	.66	.77	.60	.61	.63	.81	
Equipment and repairs (cash outlay)	\$ per head inspected	.30	.15	.55	.55	.47	1.94	1.28	1.32	1.05	
Replacements (bulls purchased)	\$ per head inspected	.12	.42	1.22	1.22	.74	.76	1.41	1.23	.95	
Other operating expense	\$ per head inspected	.53	1.51	1.60	1.60	1.04	1.57	1.27	1.24	1.12	
Total excluding interest	\$ per head inspected	11.63	13.49	14.73	14.73	13.99	17.34	19.81	21.22	20.77	
Interest paid	\$ per head inspected	2.07	1.68	1.65	1.65	1.79	1.52	1.20	1.39	1.69	
Total expense	\$ per head inspected	13.70	15.17	16.38	16.38	15.78	18.86	21.01	22.61	22.46	
Financial Progress											
Net financial progress ^b	\$ per head inspected	.40	2.30	.94	.94	-.81	3.96	3.29	2.33	6.34	
Change in total liabilities	\$ per head inspected	-.72	-.52	1.42	1.42	2.92	-5.28	3.58	3.76	-5.07	
Change in livestock inventory	\$ per head inspected	-1.59	.63	1.20	1.20	1.14	-2.77	-.09	-7.75	.68	
Change in other assets	\$ per head inspected	1.27	1.15	1.16	1.16	.97	1.45	6.96	6.84	.59	

^aOn basis of fixed values per head for each class and age group of cattle.

^bOn basis of fixed per head inventory values and cash outlay for expenses with no allowance for return on equity or compensation for management other than family living expense including life insurance.

United States Department of Agriculture, Farm Credit Administration, Economic and Credit Research Division

Table 43 - Central Oregon - groups of identical ranches: Annual production, income, expense, financial position, and progress; selected periods, 1938-43

Item	Unit	22 Ranches				11 Ranches			19 Ranches		
		1938	1939	1940	1940	1940	1941	1942	1942	1943	
Liabilities at Beginning of Year											
Livestock loan	\$ per head inspected	17.78	17.14	16.02	17.53	16.84	16.62	16.75	13.07		
Real estate mortgage	\$ per head inspected	13.14	13.88	17.73	17.66	20.03	17.59	17.77	16.03		
Other	\$ per head inspected	4.84	3.76	2.73	3.79	3.33	1.73	1.40	1.37		
Total liabilities	\$ per head inspected	35.76	34.78	36.48	38.98	40.20	35.94	35.92	30.47		
Production											
Cattle at inspection	Average number per ranch	453	445	432	507	528	578	507	508		
Cows and heifers, 2's	% number cattle inspected	45	48	50	46	49	46	50	49		
Calf crop - fall count	% number cows and heifers, 2's	75	77	72	70	76	78	78	74		
Apparent loss	% number inspected	4	4	3	3	3	6	5	5		
Net production	% number inspected	30	33	33	29	34	30	34	31		
Sales price, cattle sold	\$ per head sold	43.97	46.76	52.34	56.89	61.40	76.10	66.82	78.32		
Income											
Sales proceeds - cattle	\$ per head inspected	15.74	17.28	14.86	15.42	15.99	22.65	24.92	24.32		
Inventory change ^a	\$ per head inspected	-1.13	-1.21	1.88	1.35	2.00	1.60	.73	1.46		
Less cost of cattle purchased	\$ per head inspected	1.22	.37	.52	.69	.43	1.14	1.48	1.74		
Net proceeds from cattle	\$ per head inspected	14.39	15.70	16.22	16.08	17.56	23.11	24.17	24.04		
Other income	\$ per head inspected	.09	.07	.10	.01	.37	.67	.59	.65		
Total income	\$ per head inspected	14.48	15.77	16.32	16.09	17.93	23.78	24.76	24.69		
Operating Expense											
Taxes	\$ per head inspected	1.02	1.00	1.20	1.11	1.39	2.83	2.71	3.02		
Range (leases, permits, etc.)	\$ per head inspected	1.00	.96	1.05	1.22	.96	.92	.88	1.00		
Feed (cash outlay)	\$ per head inspected	1.28	1.27	.79	.88	.43	.56	.55	.97		
Family (including life insurance)	\$ per head inspected	.81	1.12	1.11	1.13	1.05	1.09	1.17	1.45		
Labor (hired)	\$ per head inspected	2.52	2.91	3.04	2.84	3.41	3.79	4.01	4.33		
Provisions and supplies	\$ per head inspected	1.50	1.40	1.53	1.48	1.69	1.80	1.72	1.74		
Transportation (auto, truck, etc.)	\$ per head inspected	.44	.49	.91	1.01	.61	.66	.68	.67		
Equipment and repairs (cash outlay)	\$ per head inspected	.18	.36	.83	.74	.64	.91	1.65	.86		
Replacements (bulls purchased)	\$ per head inspected	.42	.43	.78	.65	.35	.50	.75	1.77		
Other operating expense	\$ per head inspected	.61	1.11	.86	.77	.77	.67	.83	1.11		
Total excluding interest	\$ per head inspected	9.78	11.05	12.10	11.67	11.30	13.73	14.95	16.92		
Interest paid	\$ per head inspected	1.77	1.65	2.08	2.10	1.97	1.83	1.94	1.82		
Total expense	\$ per head inspected	11.55	12.70	14.18	13.77	13.27	15.56	16.89	18.74		
Financial Progress											
Net financial progress ^b	\$ per head inspected	2.93	3.07	2.14	2.32	4.66	8.22	7.87	5.95		
Change in total liabilities	\$ per head inspected	-1.54	.57	4.04	2.93	-.89	-5.32	-5.36	-1.03		
Change in livestock inventory	\$ per head inspected	-1.13	-1.21	1.88	1.35	2.00	1.60	.73	1.46		
Change in other assets	\$ per head inspected	1.52	4.85	4.50	3.90	1.77	1.30	1.78	3.46		

^aOn basis of fixed values per head for each class and age group of cattle.

^bOn basis of fixed per head inventory values and cash outlay for expenses with no allowance for return on equity or compensation for management other than family living expense including life insurance.

United States Department of Agriculture, Farm Credit Administration, Economic and Credit Research Division

Table 44 - Wallowa Area - Groups of identical ranches: Annual production, income, expense, financial position and progress; selected periods, 1938-43

Item	Unit	12 ranches				8 ranches				8 ranches	
		1938	1939	1940	1940	1940	1941	1942	1942	1943	
<u>Liabilities at Beginning of Year</u>											
Livestock loan	\$ per head inspected	45.71	16.27	17.31	19.60	17.44	20.58	16.16	18.08		
Real estate mortgage	\$ per head inspected	27.03	24.98	22.79	21.27	24.01	26.03	26.36	25.90		
Other	\$ per head inspected	3.42	2.62	2.14	3.89	2.27	.71	.50	.63		
Total liabilities	\$ per head inspected	46.16	43.87	42.24	44.76	41.72	47.32	43.02	44.61		
<u>Production</u>											
Cattle at inspection	Average No. per ranch	426	448	496	379	390	367	458	532		
Cows and heifers, 2's	% No. cattle inspected	43	38	38	40	48	47	47	40		
Calf crop - fall count	% No. cows and heifers, 2's	78	87	84	88	71	75	75	77		
Apparent loss	% No. inspected	3	2	2	3	4	4	3	3		
Net production	% No. inspected	30	31	30	32	30	32	32	27		
Sales price, cattle sold	\$ per head sold	62.08	62.47	68.33	56.23	79.48	81.76	81.90	93.54		
<u>Income</u>											
Sales proceeds - cattle	\$ per head inspected	18.72	21.61	24.37	26.93	43.29	30.03	39.33	41.06		
Inventory change ^a	\$ per head inspected	.39	2.46	2.59	3.75	8.36	.57	7.20	-1.50		
Less cost of cattle purchased	\$ per head inspected	2.31	5.21	3.03	5.73	26.71	5.69	20.14	10.88		
Net proceeds from cattle	\$ per head inspected	16.80	18.86	23.93	24.95	24.94	24.91	26.39	28.68		
Other income	\$ per head inspected	.49	.68	.59	.23	1.09	1.20	.08	.64		
Total income	\$ per head inspected	17.29	19.54	24.52	25.18	26.03	26.11	26.47	29.32		
<u>Operating Expense</u>											
Taxes	\$ per head inspected	1.99	1.57	1.33	1.42	2.17	2.42	2.62	2.60		
Range (leases, permits, etc.)	\$ per head inspected	1.75	2.17	2.04	2.42	2.32	2.11	2.05	1.82		
Feed (cash outlay)	\$ per head inspected	.47	.46	.51	.58	.75	.76	1.42	2.61		
Family (including life insurance)	\$ per head inspected	1.54	1.88	1.74	1.55	2.23	1.99	2.11	1.61		
Labor (hired)	\$ per head inspected	3.14	3.17	3.25	2.60	3.11	2.92	3.77	4.22		
Provisions and supplies	\$ per head inspected	1.88	1.93	1.90	1.70	2.13	2.06	1.74	1.52		
Transportation (auto, truck, etc.)	\$ per head inspected	1.28	.84	.77	.49	.68	.61	.86	.88		
Equipment and repairs (cash outlay)	\$ per head inspected	.48	.43	.89	.86	.50	.78	.33	.60		
Replacements (bulls purchased)	\$ per head inspected	.84	.73	.94	1.98	.60	1.20	.31	.95		
Other operating expense	\$ per head inspected	.55	1.80	1.27	1.62	2.05	2.49	2.46	1.61		
Total excluding interest	\$ per head inspected	13.92	14.98	14.64	15.22	16.52	17.34	17.67	18.42		
Interest paid	\$ per head inspected	2.88	2.70	2.51	2.53	2.99	2.12	2.95	2.24		
Total expense	\$ per head inspected	16.80	17.68	17.15	17.75	19.51	19.46	20.62	20.66		
<u>Financial Progress</u>											
Net financial progress ^b	\$ per head inspected	.49	1.86	7.37	7.43	6.52	6.65	5.85	8.66		
Change in total liabilities	\$ per head inspected	.05	2.83	.37	1.12	13.34	-3.07	8.75	-5.12		
Change in livestock inventory	\$ per head inspected	.39	2.46	2.59	3.75	8.36	.57	7.20	-1.50		
Change in other assets	\$ per head inspected	.15	2.23	5.15	4.80	11.50	3.01	7.40	5.04		

^aOn basis of fixed values per head for each class and age group of cattle.

^bOn basis of fixed per head inventory values and cash outlay for expenses with no allowance for return on equity or compensation for management other than family living expense including life insurance.

United States Department of Agriculture, Farm Credit Administration, Economic and Credit Research Division

Table 45 - Mountain Area, Montana - Groups of identical ranches; Annual production, income, expense, financial position and progress; selected periods, 1937-43

Item	Unit	21 ranches		13 ranches				5 ranches				9 ranches				20 ranches			
		1937	1938	1938	1939	1940	1940	1941	1941	1940	1940	1941	1941	1942	1942	1943	1943		
Liabilities at Beginning of Year																			
Livestock loan	\$ per head inspected	16.04	15.37	17.73	19.64	15.62	19.33	16.80	19.26	15.97	17.33	14.37							
Real estate mortgage	\$ per head inspected	19.92	17.47	21.06	17.84	14.63	14.89	14.24	15.52	11.75	12.98	14.42							
Other	\$ per head inspected	1.22	1.23	2.34	2.32	2.23	2.67	.82	.45	.13	.65	.70							
Total liabilities	\$ per head inspected	37.18	34.07	41.13	39.80	32.48	34.89	31.86	35.23	27.85	30.97	29.49							
Production																			
Cattle at inspection	Average No. per ranch	585	598	529	581	666	725	745	1,168	1,160	693	704							
Cows and heifers, 2's	% No. cattle inspected	48	44	46	50	42	43	46	48	49	49	54							
Calf crop - fall count	% No. cows and heifers, 2's	72	76	79	87	91	86	84	85	79	82	80							
Apparent loss	% No. inspected	4	3	3	2	2	2	3	4	4	4	4							
Net production	% No. inspected	31	30	34	41	36	36	36	37	35	36	39							
Sales price, cattle sold	\$ per head sold	55.80	53.09	53.82	63.97	54.29	54.03	69.78	68.29	74.60	71.88	93.95							
Income																			
Sales proceeds - cattle	\$ per head inspected	16.93	16.99	13.28	17.91	17.94	18.24	20.95	34.46	28.96	29.04	32.77							
Inventory change ^a	\$ per head inspected	.31	.81	4.25	1.77	3.15	2.22	.97	7.43	1.47	1.59	.30							
Less cost of cattle purchased	\$ per head inspected	.70	1.03	.28	.80	1.34	-	-	7.30	1.08	3.00	.69							
Net proceeds from cattle	\$ per head inspected	16.54	16.72	17.23	18.88	19.75	20.46	21.92	26.73	29.35	27.73	32.38							
Other income	\$ per head inspected	.09	.46	.12	.16	.13	.07	.32	.28	.42	.71	.82							
Total income	\$ per head inspected	16.63	17.18	17.35	19.04	19.88	20.53	22.24	27.01	29.77	28.44	33.20							
Operating Expense																			
Taxes	\$ per head inspected	1.33	1.12	1.15	1.35	1.25	1.10	1.43	1.60	4.42	3.70	4.28							
Range (leases, permits, etc.)	\$ per head inspected	4.42	1.37	1.58	1.80	1.56	1.51	2.27	2.51	2.65	2.49	2.22							
Feed (cash outlay)	\$ per head inspected	1.77	1.70	1.34	.77	.56	.52	.70	.90	.77	.82	.82							
Family (including life insurance)	\$ per head inspected	.93	1.09	1.05	.91	.95	.97	.83	2.59	1.04	1.21	1.16							
Labor (hired)	\$ per head inspected	2.94	3.10	3.24	3.24	2.81	3.65	4.70	4.27	5.37	5.28	8.53							
Provisions and supplies	\$ per head inspected	1.55	1.63	1.73	1.50	1.33	1.38	1.51	1.68	1.79	1.72	2.03							
Transportation (auto, truck, etc.)	\$ per head inspected	.63	.74	.85	.64	.66	.72	.59	.64	.71	.72	.83							
Equipment and repairs (cash outlay)	\$ per head inspected	.42	.33	.40	.58	.48	.60	1.67	.94	.91	.95	1.46							
Replacements (bulls purchased)	\$ per head inspected	.48	.42	.36	.97	.89	1.24	1.07	.66	1.79	1.81	1.64							
Other operating expense	\$ per head inspected	.36	.84	1.09	.53	.85	1.07	.25	.29	.42	.67	.75							
Total excluding interest	\$ per head inspected	11.83	12.34	12.79	12.29	11.74	12.76	15.02	16.03	19.77	19.37	23.72							
Interest paid	\$ per head inspected	1.88	1.99	2.19	1.98	1.49	1.55	1.52	1.58	1.89	1.96	1.35							
Total expense	\$ per head inspected	13.71	14.33	14.98	14.27	12.83	14.31	16.54	17.66	21.66	21.33	25.07							
Financial Progress																			
Net financial progress ^b	\$ per head inspected	2.92	2.85	2.37	4.77	7.05	6.22	5.70	9.35	8.11	7.11	8.13							
Change in total liabilities	\$ per head inspected	-2.36	-.95	2.55	-2.56	-1.84	-2.15	-4.41	-7.57	-2.61	-1.01	-5.48							
Change in livestock inventory	\$ per head inspected	.31	.81	4.23	1.77	3.15	2.22	.97	1.43	1.47	1.69	.30							
Change in other assets	\$ per head inspected	.25	1.09	.69	.44	2.06	1.85	.32	2.21	4.03	4.41	2.35							

^aOn basis of fixed values per head for each class and age group of cattle.

^bOn basis of fixed per head inventory values and cash outlay for expenses with no allowance for return on equity or compensation for management other than family living expense including life insurance.

trends in the cattle ranch business in the area, and in only a lesser degree are such changes due to shifts in the individual ranches making up the area groups.

Computing Value of Cattle in Annual Ranch Inventory

In computing year-to-year changes in the cattle inventory of each ranch, for the purpose described on page 12, the following scale of fixed per head values by classes and ages of cattle was used for every year throughout the period covered by the study from fall 1934 to fall 1943; the values are given in dollars per head for the indicated class and age group:

Cows 7's up	\$30	Calves	\$15
Cows 3-6's	45	Steers 1's	40
Heifers 2's	40	Steers 2's	50
Heifers 1's	30	Bulls	60

Total Liabilities and Livestock Loan

Yearly averages, 1935-43, of total liabilities and livestock loan of all ranches represented in the study are shown in tables 34-39. For convenient reference they are repeated here in table 46, to which 6-area averages by years have been added to support the discussion of ranch indebtedness on page 25.

Table 46 - Total liabilities and livestock loan: Annual average of all ranches studied, by areas, 1935-43

A. Total liabilities							
Approximate date of financial statements	Klamath area, Oregon	Central Oregon area	Wallowa area	Southern Idaho area	Mountain area, Montana	Plains area, Montana	Average 6 areas
	<i>dollars per head inspected</i>						
Fall 1934	32.83	35.55	43.52	31.43	37.12	52.74	38.86
Fall 1935	32.27	31.83	41.54	30.71	34.13	50.02	36.75
Fall 1936	32.72	32.86	42.94	31.33	37.18	53.01	38.34
Fall 1937	34.78	33.14	45.74	31.36	36.05	50.17	38.54
Fall 1938	35.34	34.78	43.87	34.74	41.05	44.10	38.98
Fall 1939	34.46	36.48	44.45	31.46	32.48	40.87	36.70
Fall 1940	35.34	41.09	47.91	28.01	34.82	28.00	35.86
Fall 1941	31.53	37.22	45.00	36.78	31.88	31.90	35.72
Fall 1942	39.19	28.97	42.93	26.21	27.07	36.51	33.48
Fall 1943	34.54	27.38	41.41	22.88	21.69	30.08	29.66
B. Livestock loan							
Approximate date of financial statements	Klamath area, Oregon	Central Oregon area	Wallowa area	Southern Idaho area	Mountain area, Montana	Plains area, Montana	Average 6 areas
	<i>dollars per head inspected</i>						
Fall 1934	17.06	17.28	20.22	15.15	15.75	13.31	16.46
Fall 1935	13.96	13.86	17.98	13.94	14.49	17.25	15.25
Fall 1936	16.15	13.41	19.00	15.94	16.04	18.27	16.47
Fall 1937	19.02	15.54	18.24	14.88	15.42	16.63	16.29
Fall 1938	19.41	17.14	16.27	14.10	19.67	15.69	17.05
Fall 1939	20.64	16.02	17.75	12.81	15.62	15.13	16.32
Fall 1940	24.39	18.45	20.37	12.42	18.81	12.45	17.82
Fall 1941	20.20	18.06	17.59	19.37	16.75	20.06	18.76
Fall 1942	25.17	12.56	18.88	11.65	13.32	19.01	16.76
Fall 1943	19.03	14.02	15.56	8.18	12.59	16.36	14.29

Area Averages of Production, Income, and Expense
During Selected Years

An area summary of yearly average production, income, and expense of cattle ranches in selected years has been provided on pages 54-59. A year of low cattle prices, a year of high cattle prices, and a year approximating long-term average cattle prices were selected from the 9-year 1935-43 period. For the three selected years, annual averages of significant production and financial progress data have been arranged for ready reference. A separate page has been allotted to the record of each of the six production areas.

CATTLE RANCHES: KLAMATH AREA
Average production, income, expense, and net
financial progress in selected years

Item	Unit	1936 A year of low cattle prices	1943 A year of high cattle prices	1939 A year approx- imating average cattle prices
<u>Prices and Condition of Ranges</u>				
Cattle, U. S. farm price	Index, 1911-32 = 100 1/	84	169	102
Cattle, Oregon, farm price	\$ per 100 pounds	5.50	11.20	6.60
Commodity prices, wholesale, U.S. Condition of ranges, previous 4-1 to 3-1	Index, 1910-14 = 100	118	150	113
Condition of ranges, calendar year	Percent 2/	80	79	88
	Percent 2/	81	80	75
<u>Financial Progress Summary</u>				
Total ranch income	\$ per head inspected	17.36	28.80	17.47
Total operating expense	\$ per head inspected	14.72	22.46	15.17
Net financial progress 3/	\$ per head inspected	2.64	6.34	2.30
<u>Production</u>				
Calf crop, fall count	% number cows and hfrs. 2's	64	67	62
Apparent loss	% number cattle inspected	3	4	2
Sales price of cattle sold	\$ per head sold	61.71	96.84	57.94
<u>Income Analysis</u>				
Sales proceeds, cattle	\$ per head inspected	16.05	30.27	17.24
Inventory change 4/	\$ per head inspected	2.84	.68	.63
Less cost of cattle purchased	\$ per head inspected	1.53	4.09	.69
Net proceeds from cattle	\$ per head inspected	17.36	26.86	17.18
Other income	\$ per head inspected	-	1.94	.29
Total income	\$ per head inspected	17.36	28.80	17.47
<u>Operating Expense Detail</u>				
Labor	\$ per head inspected	3.28	5.97	3.90
Hay, grain, salt, etc.	\$ per head inspected	2.35	.50	1.42
Range, leases, permits, etc.	\$ per head inspected	2.20	5.51	2.58
Provisions and supplies	\$ per head inspected	1.01	1.53	.93
Interest	\$ per head inspected	2.00	1.69	1.68
Taxes	\$ per head inspected	1.26	2.63	1.19
Gasoline and oil	\$ per head inspected	.43	.81	.61
Repairs and equipment	\$ per head inspected	-	1.05	.15
Family, including life insurance	\$ per head inspected	1.07	.70	.98
Bulls purchased	\$ per head inspected	.61	.95	.42
Other operating expense	\$ per head inspected	.51	1.12	1.31
Total operating expense	\$ per head inspected	14.72	22.46	15.17
<u>Debts of Ranch Operators 5/</u>				
Livestock loan	\$ per head inspected	13.96	25.17	19.41
Real estate debt	\$ per head inspected	16.77	11.44	14.77
Other debts	\$ per head inspected	1.54	2.58	1.16
Total debts	\$ per head inspected	32.27	39.19	35.34
<u>Basis of Averages</u>				
Number of ranches analyzed	total number	6	7	13
Number of cattle at inspection	average number per ranch	1,048	705	653

See page 60 for footnotes.

CATTLE RANCHES: CENTRAL OREGON AREA
Average Production, Income, Expense, and Net
Financial Progress in Selected Years

Item	Unit	1936 A year of low cattle prices	1943 A year of high cattle prices	1939 A year approx- imating average cattle prices
<u>Prices and Condition of Ranges</u>				
Cattle, U. S. farm price	Index, 1911-32 = 100 1/	84	169	102
Cattle, Oregon, farm price	\$ per 100 pounds	5.50	11.20	6.60
Commodity prices, wholesale, U. S.	Index, 1910-14 = 100	118	150	113
Condition of ranges, previous 4-1 to 3-1	Percent 2/	80	79	88
Condition of ranges, calendar year	Percent 2/	81	80	73
<u>Financial Progress Summary</u>				
Total ranch income	\$ per head inspected	12.26	24.80	15.77
Total operating expense	\$ per head inspected	10.31	19.64	12.70
Net financial progress 3/	\$ per head inspected	1.95	5.16	3.07
<u>Production</u>				
Calf Crop, fall count	% number cows and hfrs. 2's	66	75	77
Apparent loss	% number cattle inspected	4	5	4
Sales price of cattle sold	\$ per head sold	49.46	76.66	46.76
<u>Income Analysis</u>				
Sales proceeds, cattle	\$ per head inspected	11.28	24.62	17.28
Inventory change 4/	\$ per head inspected	1.42	1.13	-1.21
Less cost of cattle purchased	\$ per head inspected	.57	1.57	.37
Net proceeds from cattle	\$ per head inspected	12.13	24.18	15.70
Other income	\$ per head inspected	.13	.62	.07
Total income	\$ per head inspected	12.26	24.80	15.77
<u>Operating Expense Detail</u>				
Labor	\$ per head inspected	1.66	4.60	2.91
Hay, grain, salt, etc.	\$ per head inspected	1.84	1.23	1.27
Range, leases, permits, etc.	\$ per head inspected	.84	1.02	.96
Provisions and supplies	\$ per head inspected	1.03	1.82	1.40
Interest	\$ per head inspected	2.02	1.78	1.65
Taxes	\$ per head inspected	1.05	3.02	1.00
Gasoline and oil	\$ per head inspected	.41	.73	.49
Repairs and equipment	\$ per head inspected	.02	.81	.36
Family, including life insurance	\$ per head inspected	.56	1.45	1.12
Bulls purchased	\$ per head inspected	.31	1.87	.43
Other operating expense	\$ per head inspected	.57	1.31	1.11
Total operating expense	\$ per head inspected	10.31	19.64	12.70
<u>Debts of ranch operators 5/</u>				
Livestock loan	\$ per head inspected	13.86	12.56	17.14
Real estate debt	\$ per head inspected	16.26	15.13	13.88
Other debts	\$ per head inspected	1.71	1.28	3.76
Total debts	\$ per head inspected	31.83	28.97	34.78
<u>Basis of Averages</u>				
Number of ranches analyzed	total number	12	22	22
Number of cattle at inspection	average number per ranch	546	484	445

See page 60 for footnotes.

CATTLE RANCHES: WALLOWA AREA
Average Production, Income, Expense, and Net
Financial Progress in Selected Years

Item	Unit	1936 A year of low cattle prices	1943 A year of high cattle prices	1937 A year approx- imating average cattle prices
<u>Prices and Condition of Ranges</u>				
Cattle, U. S. farm price	Index, 1911-32 = 100 1/	84	169	100
Cattle, Oregon-Idaho, farm price	\$ per 100 pounds	5.30	11.05	6.40
Commodity prices, wholesale, U.S.	Index, 1910-14 = 100	118	150	126
Condition of ranges, previous 4-1 to 3-1	Percent 2/	76	81	79
Condition of ranges, calendar year	Percent 2/	79	81	80
<u>Financial Progress Summary</u>				
Total ranch income	\$ per head inspected	11.90	27.55	20.68
Total operating expense	\$ per head inspected	13.35	22.02	17.25
Net financial progress 3/	\$ per head inspected	-1.45	5.53	3.43
<u>Production</u>				
Calf crop, fall count	% number cows and hfrs. 2's	70	76	73
Apparent loss	% number cattle inspected	5	3	2
Sales price of cattle sold	\$ per head sold	52.08	91.28	68.34
<u>Income Analysis</u>				
Sales proceeds, cattle	\$ per head inspected	14.45	40.13	24.56
Inventory change 4/	\$ per head inspected	-1.07	-1.94	-1.13
Less cost of cattle purchased	\$ per head inspected	1.62	11.33	3.29
Net proceeds from cattle	\$ per head inspected	11.76	26.86	20.04
Other income	\$ per head inspected	.14	.69	.64
Total income	\$ per head inspected	11.90	27.55	20.68
<u>Operating Expense Detail</u>				
Labor	\$ per head inspected	2.27	4.98	2.53
Hay, grain, salt, etc.	\$ per head inspected	2.03	2.35	2.16
Range, leases, permits, etc.	\$ per head inspected	1.63	1.63	1.49
Provisions and supplies	\$ per head inspected	1.42	1.95	1.55
Interest	\$ per head inspected	2.36	2.16	2.60
Taxes	\$ per head inspected	.96	2.93	1.04
Gasoline and oil	\$ per head inspected	.42	.88	.73
Repairs and equipment	\$ per head inspected	.07	1.00	.56
Family, including life insurance	\$ per head inspected	1.47	1.85	1.84
Bulls purchased	\$ per head inspected	.36	.86	.65
Other operating expense	\$ per head inspected	.36	1.43	2.10
Total operating expense	\$ per head inspected	13.35	22.02	17.25
<u>Debts of Ranch Operators 5/</u>				
Livestock loan	\$ per head inspected	17.98	18.88	19.00
Real estate debt	\$ per head inspected	20.43	23.28	21.12
Other debts	\$ per head inspected	3.13	.77	2.82
Total debts	\$ per head inspected	41.54	42.93	42.94
<u>Basis of Averages</u>				
Number of ranches analyzed	total number	10	9	10
Number of cattle at inspection	average number per ranch	507	526	508

See page 60 for footnotes.

CATTLE RANCHES: SOUTHERN IDAHO
Average Production, Income, Expense, and Net
Financial Progress in Selected Years

Item	Unit	1936 A year of low cattle prices	1943 A year of high cattle prices	1939 A year approx- imating average cattle prices
<u>Prices and Condition of Ranges</u>				
Cattle, U. S. farm price	Index, 1911-32 = 100 1/	84	169	102
Cattle, Idaho, farm price	\$ per 100 pounds.	5.10	10.90	6.20
Commodity prices, wholesale, U.S.	Index, 1910-14 = 100	118	150	113
Condition of ranges, previous 4-1 to 3-1	Percent 2/	88	84	94
Condition of ranges, calendar year	Percent 2/	88	84	81
<u>Financial Progress Summary</u>				
Total ranch income	\$ per head inspected	12.65	24.77	17.28
Total operating expense	\$ per head inspected	12.78	16.62	13.61
Net financial progress 3/	\$ per head inspected	- .13	8.15	3.67
<u>Production</u>				
Calf crop, fall count	% number cows and hfrs. 2's	77	75	80
Apparent loss	% number cattle inspected	7	2	3
Sales price of cattle sold	\$ per head sold	49.85	74.51	50.19
<u>Income Analysis</u>				
Sales proceeds, cattle	\$ per head inspected	10.74	23.11	15.52
Inventory change 4/	\$ per head inspected	2.30	1.60	1.83
Less cost of cattle purchased	\$ per head inspected	.54	-	.61
Net proceeds from cattle	\$ per head inspected	12.50	24.71	16.74
Other income	\$ per head inspected	.15	.06	.54
Total income	\$ per head inspected	12.65	24.77	17.28
<u>Operating Expense Detail</u>				
Labor	\$ per head inspected	1.99	4.05	2.89
Hay, grain, salt, etc.	\$ per head inspected	2.96	2.34	1.47
Range, leases, permits, etc.	\$ per head inspected	.65	1.34	.82
Provisions and supplies	\$ per head inspected	1.68	1.14	1.61
Interest	\$ per head inspected	1.98	1.67	1.79
Taxes	\$ per head inspected	.91	3.03	1.07
Gasoline and oil	\$ per head inspected	.49	.55	.70
Repairs and equipment	\$ per head inspected	.18	.22	.47
Family, including life insurance	\$ per head inspected	1.40	1.79	1.64
Bulls purchased	\$ per head inspected	.31	.20	.58
Other operating expense	\$ per head inspected	.23	.29	.57
Total operating expense	\$ per head inspected	12.78	16.62	13.61
<u>Debts of Ranch Operators 5/</u>				
Livestock loan	\$ per head inspected	13.94	11.65	14.10
Real estate debt	\$ per head inspected	12.65	14.12	19.48
Other debts	\$ per head inspected	4.12	.44	1.16
Total debts	\$ per head inspected	30.71	26.21	34.74
<u>Basis of Averages</u>				
Number of ranches analyzed	total number	11	5	5
Number of cattle at inspection	average number per ranch	287	692	569

See page 60 for footnotes.

CATTLE RANCHES: MOUNTAIN AREA OF MONTANA
Average Production, Income, Expense, and Net
Financial Progress in Selected Years

Item	Unit	1936 A year of low cattle prices	1943 A year of high cattle prices	1939 A year approx- imating average cattle prices
<u>Prices and Condition of Ranges</u>				
Cattle, U. S. farm price	Index, 1911-32 = 100 1/	84	169	102
Cattle, Montana, farm price	\$ per 100 pounds	4.80	11.40	6.80
Commodity prices, wholesale, U.S.	Index, 1910-14 = 100	118	150	113
Condition of ranges, previous 4-1 to 3-1	Percent 2/	78	90	92
Condition of ranges, calendar year	Percent 2/	73	88	88
<u>Financial Progress Summary</u>				
Total ranch income	\$ per head inspected	10.82	32.56	19.16
Total operating expense	\$ per head inspected	11.91	25.06	14.36
Net financial progress 3/	\$ per head inspected	-1.09	7.50	4.80
<u>Production</u>				
Calf crop, fall count	% number cows and hfrs. 2's	72	79	87
Apparent loss	% number cattle inspected	4	3	2
Sales price of cattle sold	\$ per head sold	36.43	92.90	63.83
<u>Income Analysis</u>				
Sales proceeds, cattle	\$ per head inspected	13.77	32.05	18.16
Inventory change 4/	\$ per head inspected	-2.58	1.36	1.82
Less cost of cattle purchased	\$ per head inspected	.47	1.89	.97
Net proceeds from cattle	\$ per head inspected	10.72	31.52	19.01
Other income	\$ per head inspected	.10	1.04	.15
Total income	\$ per head inspected	10.82	32.56	19.16
<u>Operating Expense Detail</u>				
Labor	\$ per head inspected	2.27	7.80	3.23
Hay, grain, salt, etc.	\$ per head inspected	2.40	.91	.77
Range, leases, permits, etc.	\$ per head inspected	.99	2.63	1.79
Provisions and supplies	\$ per head inspected	1.26	2.15	1.53
Interest	\$ per head inspected	1.70	1.36	2.04
Taxes	\$ per head inspected	1.03	3.96	1.35
Gasoline and oil	\$ per head inspected	.39	.85	.64
Repairs and equipment	\$ per head inspected	.24	1.36	.56
Family, including life insurance	\$ per head inspected	.68	1.23	.96
Bulls purchased	\$ per head inspected	.67	1.76	.95
Other operating expense	\$ per head inspected	.28	1.05	.54
Total operating expense	\$ per head inspected	11.91	25.06	14.36
<u>Debts of Ranch Operators 5/</u>				
Livestock loan	\$ per head inspected	14.49	13.32	19.67
Real estate debt	\$ per head inspected	18.11	12.61	19.04
Other debts	\$ per head inspected	1.53	1.14	2.34
Total debts	\$ per head inspected	34.13	27.07	41.05
<u>Basis of Averages</u>				
Number of ranches analyzed	total number	21	31	14
Number of cattle at inspection	average number per ranch	633	592	550

See page 60 for footnotes.

CATTLE RANCHES: PLAINS AREA OF MONTANA
Average Production, Income, Expense, and Net
Financial Progress in Selected Years

Item	Unit	1936 A year of low cattle prices	1943 A year of high cattle prices	1939 A year approx- imating average cattle prices
<u>Prices and Condition of Ranges</u>				
Cattle, U. S. farm price	Index, 1911-32 = 100 1/	84	169	102
Cattle, Montana, farm price	\$ per 100 pounds	4.80	11.40	6.80
Commodity prices, wholesale, U.S.	Index, 1910-14 = 100	118	150	113
Condition of ranges, previous 4-1 to 3-1	Percent 2/	73	92	86
Condition of ranges, calendar year	Percent 2/	57	89	87
<u>Financial Progress Summary</u>				
Total ranch income	\$ per head inspected	10.67	23.54	17.22
Total operating expense	\$ per head inspected	12.60	16.88	13.15
Net financial progress 3/	\$ per head inspected	-1.93	6.66	4.07
<u>Production</u>				
Calf crop, fall count	% number cows and hfrs. 2's	82	86	77
Apparent loss	% number cattle inspected	5	5	4
Sales price of cattle sold	\$ per head sold	27.69	73.26	49.19
<u>Income Analysis</u>				
Sales proceeds, cattle	\$ per head inspected	10.76	20.38	18.32
Inventory change 4/	\$ per head inspected	-.58	2.22	4.63
Less cost of cattle purchased	\$ per head inspected	-	.88	6.27
Net proceeds from cattle	\$ per head inspected	10.18	21.72	16.68
Other income	\$ per head inspected	.49	1.82	.54
Total income	\$ per head inspected	10.67	23.54	17.22
<u>Operating Expense Detail</u>				
Labor	\$ per head inspected	1.03	3.39	2.07
Hay, grain, salt, etc.	\$ per head inspected	3.16	1.43	.55
Range, leases, permits, etc.	\$ per head inspected	.79	1.09	.87
Provisions and supplies	\$ per head inspected	1.95	1.49	1.75
Interest	\$ per head inspected	1.70	2.26	1.79
Taxes	\$ per head inspected	1.77	2.82	2.17
Gasoline and oil	\$ per head inspected	.26	.69	.66
Repairs and equipment	\$ per head inspected	.30	1.41	.51
Family, including life insurance	\$ per head inspected	.82	.46	1.64
Bulls purchased	\$ per head inspected	.53	1.04	.61
Other operating expense	\$ per head inspected	.29	.80	.53
Total operating expense	\$ per head inspected	12.60	16.88	13.15
<u>Debts of Ranch Operators 5/</u>				
Livestock loan	\$ per head inspected	17.25	19.01	15.69
Real estate debt	\$ per head inspected	27.90	16.91	24.33
Other debts	\$ per head inspected	4.87	.59	4.08
Total debts	\$ per head inspected	50.02	36.51	44.10
<u>Basis of Averages</u>				
Number of ranches analyzed	total number	6	12	10
Number of cattle at inspection	average number per ranch	317	357	278

See page 60 for footnotes.

Footnotes For Area Summaries - Pages 54 to 59

- 1/ Period selected to include two complete cattle price cycles, and to approximate two cycles in cattle numbers.
- 2/ From unpublished data; represents the average of monthly reports of reporting district or district most nearly including or approximating the production area. State averages for the 15-year, 1923-37 period, calendar year basis, were Oregon 84, Idaho 84, Montana 86. See table 3 and chart B in main section of this study.
- 3/ On basis of fixed per head inventory values and cash outlay for expenses with no allowance for return on equity or compensation for management other than family living expense including life insurance.
- 4/ On basis of fixed values per head for each class and age group of cattle.
- 5/ Debts at beginning of the indicated operating year.

Bibliography

Following is a reference list of similar analyses of cattle ranches prepared by the Economic and Credit Research Division in cooperation with the Federal intermediate credit banks, production credit corporations, and directors of research of the respective districts:

Production, income, and expense of cattle ranches in the Omaha, Wichita, and Berkeley Farm Credit Districts, 1935-37 (176 ranches)

Cattle Ranches: Colorado and New Mexico, 1937-39 (126 ranches)

Cattle Ranches: Spokane Farm Credit District, 1935-38 (77 ranches)

Cattle Ranches: Texas, 1938-40 (60 ranches)

Cattle Ranches: Omaha Farm Credit District, 1938-41 (48 ranches)

Cattle Ranches: Colorado and New Mexico, 1935-42 (687 ranch-year records)

Cattle Ranches: Omaha Farm Credit District, 1936-43 (in process)

